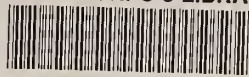


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MARINE CORPS CONCEPTS AND ISSUES



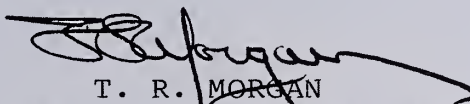
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Introduction

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Concepts & Issues is a ready reference on subjects affecting the future of the Marine Corps. The papers, divided into nine subject areas, were written by the Headquarters staff during development of the POM. This edition is not all-inclusive, and much of the information is time-sensitive. Although Concepts & Issues does not express official Marine Corps doctrine, it does address a cross section of the USMC issues that will shape our future structure and capability. This document is designed to aid the Headquarters staff in evaluating programs and in anticipating future requirements. In addition it serves as a vehicle for maintaining a dialogue with Marines in the Fleet and Marine supporters throughout the Defense establishment. I hope that this book will be useful in your endeavors.



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SECTION I

THE FLEET MARINE FORCE

This section presents papers dealing with Fleet Marine Force (FMF) capabilities, organization, current commitments, and future development. "The USMC in the National Security Act" provides a framework within which to fit the subsequent topics. "Marine Corps Tactical Force Organization" and "Contingency Response" summarize the organization and current commitments of the operating forces including forward afloat deployments, air contingency forces, and command relationships. "Fleet Marine Forces as an Instrument of U.S. Policy" proposes a return to a primarily maritime national strategy and postulates a strengthened role for USMC forces as critical to its execution. The paper entitled "The U.S. Marine Corps as a Part of the Total U.S. Capability" presents a framework of USMC contributions to the national capability. Finally, "The Fleet Marine Force Today" presents current programs designed to enhance our modernization efforts and an assessment of current capability. The last paper, "The Marine Corps Reserve", provides current Reserve contributions to the Total Force and highlights present modernization and enhancement programs.



THE USMC IN THE NATIONAL SECURITY ACT

- The mission of the Marine Corps is found in Title 10, U.S.C. (National Security Act of 1947 w/Amendments), Section 5013.

"Section 5013, United States Marine Corps: composition; functions.

- (a) The Marine Corps, within the Department of the Navy, shall be organized as to include not less than three combat divisions and three air wings, such other land combat, aviation, and other services as may be organic therein. The Marine Corps shall be organized, trained, and equipped to provide Fleet Marine Forces of combined arms, together with supporting air components, for service with the fleet in seizure or defense of advanced naval bases and for the conduct of a naval campaign. In addition, the Marine Corps shall provide detachments and organizations for service on armed vessels of the Navy, shall provide security detachments for the protection of naval property at naval stations and bases, and shall perform such other duties as the President may direct. However, these additional duties may not detract from or interfere with the operations for which the Marine Corps is primarily organized.
- (b) The Marine Corps shall develop, in coordination with the Army and the Air Force, those phases of amphibious operations that pertain to the tactics, techniques, and equipment used by landing forces.
- (c) The Marine Corps is responsible, in accordance with integrated joint mobilization plans, for the expansion of peacetime components of the Marine Corps to meet the needs of war."

- A 1978 amendment to the National Security Act provides that the Commandant of the Marine Corps sits as a full member of the Joint Chiefs of Staff.

COMPOSITION OF THE MARINE CORPS

The four major components of the Regular Establishment of the Marine Corps are:

- Headquarters of the Marine Corps
- Operating Forces
- Supporting Establishment
- Marine Corps Reserve

The Operating Forces of the Marine Corps consist of:

- The Fleet Marine Forces (FMF)
- Marine Detachments Afloat
- Security Forces

The Supporting Establishment includes those Marine Corps schools, recruit depots, supply installations, bases, barracks, air stations, and other activities that train, maintain, and support Operating Forces.

The Marine Corps Reserve provides a trained force of qualified personnel for active duty in the U. S. Marine Corps in time of war or national emergency.

MARINE CORPS TACTICAL FORCE ORGANIZATION

Fleet Marine Forces are comprised of ground, air, combat support, and combat service support (CSS) units that are routinely task organized into Marine Air-Ground Task Forces (MAGTFs) for both training exercises and deployments. Marine Corps policy is that Fleet Marine Forces will be employed as integrated air-ground task forces tailored to accomplish specific missions. Regardless of the size of the MAGTF, it will include four major components:

- Command Element,
- Ground Combat Element, (GCE)
- Aviation Combat Element, (ACE)
- Combat Service Support Element.

There are three basic types of MAGTFs. The Marine amphibious force (MAF) is the largest of the MAGTFs, and is normally built around a division/wing team. However, it may range in size from less than a complete division/ wing team up to several divisions and aircraft wings, together with an appropriate combat service support organization. The MAF is commanded by either a major general or a lieutenant general, depending on its size and mission. It is capable of conducting a wide range of amphibious assault operations and sustained operations ashore, and can be tailored for a wide variety of combat missions in any geographic environment. A MAF is deployed in three stages. The first and largest is the assault echelon (AE). The approximate numbers of Marine and Navy personnel associated with the AE are depicted below. The second wave of personnel arrive with the assault follow on echelon (AFOE). Finally, the fly in echelon (FIE) arrives and the MAF, consisting of over 58,000 Marines and sailors, is complete. A notional task organization for the assault echelon of a MAF is displayed in Figure 1.

MARINE AMPHIBIOUS FORCE (MAF) (AE)

<u>FORCE</u>	<u>PERSONNEL</u>
<u>HEADQUARTERS</u>	USMC 33,330
	USN 1,640

MARINE AIRCRAFT WING (MAW)

REINFORCED DIVISION

FORCE SERVICE SUPPORT GROUP (FSSG)

AIRCRAFT/MISSILES

MAJOR GROUND WEAPONS SYSTEMS

100 AV-8/A-4	156 CH-46	70 TANKS	
72 F-4/F-18	80 CH-53A/D	72 81MM MORTAR	90 155MM HOW
40 A-6	32 CH-53E	288 DRAGON	18 155MM HOW(SP)
15 EA-6	24 UH-1	72 TOW LAUNCHER	12 8" HOW(SP)
7 RF-4	24 HAWK LAUNCHER	601 M-60 MG	81 60MM MORTAR
12 OV-10	300 REDEYE/STINGER	435 50 CAL MG	
24 KC-130	72 AH-1	208 AAV	
12 TA-4/OA-4			

FIGURE 1

The Marine amphibious brigade (MAB) is the second basic type of MAGTF and is a task organization which is normally built around a reinforced infantry regiment and a composite Marine aircraft group. It is normally commanded by a brigadier general and is capable of conducting amphibious assault operations of limited scope. During potential crisis situations, a MAB may be forward deployed afloat for an extended period to provide immediate response and may serve as the precursor of a larger force. Under these conditions, MAB combat operations may be supported from the seabase, facilities ashore, or a combination of the two. The MAB is deployed in three stages like a MAF. Most of the combat capability and Marine personnel are included in the assault echelon. A notional task organization for a MAB (Assault Echelon) is displayed in Figure 2.

<u>MARINE AMPHIBIOUS BRIGADE (MAB) (AE)</u>			
<u>BRIGADE HEADQUARTERS</u>		<u>PERSONNEL</u>	
		USMC	10,444
		USN	536
<u>MARINE AIRCRAFT GROUP (MAG)</u>		<u>REGIMENTAL LANDING TEAM (RLT)</u>	
<u>BRIGADE SERVICE SUPPORT GROUP (BSSG)</u>			
<u>AIRCRAFT/MISSILES</u>		<u>MAJOR GROUND WEAPONS SYSTEMS</u>	
40 AV-8/A-4	48 CH-46	17 TANKS	
24 F-4/F-18	32 CH-53 A/D	24 81MM MORTAR	30 155MM HOW
20 A-6	10 CH-53E	96 DRAGON	6 8" HOW (SP)
7 EA-6	24 AH-1	48 TOW	27 60MM MORTAR
4 RF-4	6 UH-1	255 M-60 MG	138 50 CAL MG
6 OV-10	6 HAWK LAUNCHERS	90 AAV	
8 KC-130	60 REDEYE/STINGER		

FIGURE 2

The Marine amphibious unit (MAU) is a task organization which is normally built around a reinforced infantry battalion and a composite squadron. It is normally commanded by a colonel and employed to fulfill routine forward afloat deployment requirements. The MAU provides an immediate reaction capability to crisis situations and is capable of relatively limited combat operations. Because of its comparatively limited sustainability, it is not envisioned that a MAU will routinely conduct amphibious assaults. When committed ashore, a MAU is normally supported from its seabase. A MAU is considered to be the forward afloat deployed element of a larger landing force, which would be constituted as required from CONUS or forward based combat ready Fleet Marine Forces. A notional task organization for a MAU is displayed in Figure 3.

MARINE AMPHIBIOUS UNIT (MAU)*

		<u>HEADQUARTERS</u>	<u>PERSONNEL</u>	
			USMC	2,268
			USN	104
		<u>COMPOSITE SQUADRON</u>	<u>BATTALION LANDING TEAM</u>	
		<u>MAU SERVICE SUPPORT GROUP</u>		
<u>AIRCRAFT/MISSILES</u>			<u>MAJOR GROUND WEAPONS SYSTEMS</u>	
6	AV-8*		5 TANKS	8 155MM HOW
12	CH-46		8 81MM MORTAR	9 60MM MORTAR
4	CH-53A/D		32 DRAGON	20 50 CAL MG
2	CH-53E		8 TOW	60 M60 MG
8	AH-1		12 AAV	
4	UH-1			
20	REDEYE			

FIGURE 3

* ACTUAL TASK ORGANIZATION FORMED TO ACCOMPLISH SPECIFIC MISSIONS
MAY VARY FROM THE ORGANIZATION SHOWN

The MAGTF is a tailored combined arms organization. Separate employment of MAGTF elements under another command structure is contrary to Marine Corps policy. To do so is to fragment combat power, cause tactical and logistical supportability to become questionable, and reduce overall combat effectiveness.

MAGTFs organized for amphibious operations deploy as the landing force aboard amphibious task force shipping. MAGTFs are also deployed for rapid response or reinforcing roles by means of tactical or strategic air or sealift. MAGTFs may be formed and deployed for combat, contingency deployments, and training exercises, and may be committed to combat from contingency deployments.

CONTINGENCY RESPONSE

A MAGTF forward deployed as a contingency force is usually embarked in amphibious shipping. Its organization is based upon a general mission with consideration given to potential mission requirements and available forces. Because of their inherent flexibility, MAGTFs are capable of rapid response to innumerable crisis situations. The missions that may be performed by the forward deployed MAGTFs short of actual combat or amphibious assault include:

- Assist U. S. diplomatic efforts through peaceful projection of influence and, during periods of crisis, provide a selective show of force and interest.
- Assist early commitment of U. S. force to combat when required by controlling airfield and port facilities.
- Preserve options limiting the degree, direction, and character of U. S. involvement.
- Assist allies through provision of flexible and selective levels of military assistance.
- Provide humanitarian assistance/disaster relief.
- Protect/evacuate non-combatants and installations.

Fleet Marine Force, Atlantic (FMFLANT), Norfolk, Virginia, provides forces to constitute the 22d MAU and 24th MAU for deployments to the Mediterranean and Indian Ocean. Three to five amphibious ships, depending upon type, are required for the 2000 Marines and sailors comprising the MAU.

Fleet Marine Force, Pacific (FMFPAC), Camp Smith, Hawaii, provides forces that make up the 31st MAU for deployments to the Western Pacific and Indian Ocean. Four amphibious ships are required for the 1800 Marines and sailors comprising this MAU. Additionally, FMFPAC provides forces for BLT BRAVO deployments in the Western Pacific aboard three amphibious ships with an approximate strength of 1200 Marines and sailors deployed from forces stationed on Okinawa.

Embarked landing force Marines are frequently ashore for training. Normal reaction time encompasses reembarkation and getting underway within 48 hours. However, reaction time in a contingency area can be reduced to less than one hour through utilization of warning indicators and positioning the amphibious task force and landing force offshore.

Each of the Marine Corps' three divisions maintains an air contingency battalion landing team (BLT) of about 1200 Marines and Navy Corpsmen on alert for deployment by Military Airlift

Command (MAC) aircraft to respond to fast-breaking worldwide contingency situations. These teams are equipped with crew-served weapons, e.g., 81mm mortars, the anti-tank missile systems DRAGON and TOW, and 155mm howitzers.

Reaction times vary as established by operational commanders. Response times may be 16 hours or less from departure airfields by implementing planned air alert procedures. Airlift requirements vary in response to prescribed equipment and supply loads established by the operational commanders.

The requirement for the rapid movement of credible forces to distant locations had been a limiting factor in crisis response for many years. A new dimension to the Marine Corps response posture has been developed. This contingency response program is known as the Maritime Prepositioning Ships (MPS) program. MPS is one of the most significant developments in contemporary Marine Corps history. It substantially increases mobility, sustainability and flexibility in the projection of naval power.

In essence, MPS calls for a squadron of four to five ships loaded with combat equipment, vehicles and supplies to be located in designated ports and/or deployed at sea. When ordered, the Marines comprising an MPS Marine Amphibious Brigade (MPS MAB) are airlifted to the vicinity of the objective area for link-up with the squadron and their equipment. Simultaneously, the MAB's tactical aircraft are flight ferried to a nearby airfield. This MPS MAB, made up of 16,500 Marines and Sailors, can be combat capable and ready to move to an objective in five days. The preemptive deployment of MPS forces provides both responsiveness and flexibility for contingency response. The MPS program will be discussed in greater detail later in this issue.

Navy-Marine Corps operational forces are normally assigned to the fleet commanders. Forward deployed forces are under the operational control of the the fleet commander through the appropriate unified commander. Changes in operational control occur as forces pass through the geographical areas assigned to various unified commands.

Naval forces conduct amphibious operations either in support of a joint task force or subordinate unified command already established in the contingency theater. Marine forces deployed by strategic airlift or sealift deploy under the operational control of their normal fleet commander. On arrival in theater (or at another point mutually agreed upon by the unified commanders concerned), Marine forces come under the operational control of the appropriate joint task force or unified commander.

A MAGTF engaged in sustained operations ashore, as part of a joint task force or unified command, is employed as a separate service component of the joint command, or as a single service force under the land force commander (of the joint task force or unified commander). Regardless of the command exercising control, the MAGTF maintains its unit integrity.

THE FMF AS AN INSTRUMENT OF U.S. POLICY

The circumstances surrounding the future employment of Fleet Marine Forces are likely to differ significantly from those which prevailed during the three decades following the Korean War. The strength of Soviet military forces, naval forces in particular, has increased dramatically. Recognizing this, the national leadership has adopted and is vigorously supporting a maritime strategy to ensure the protection of the oceanic lifelines between our Allies and the vital resources our economy requires. This effort has resulted in the enhancement of the FMF as an instrument of national policy.

The unprecedented Soviet military build-up in both strategic and conventional forces is an ominous event that alters the factors involved in maintaining world peace. The Soviet's sophisticated navy is a vital link in support of destabilization programs and Soviet influence in the Third World. Soviet naval forces also have an emerging capability for amphibious power projection far from the homeland.

Changes in international economics have been equally dramatic. Growing dependence on Third World raw material sources has increased the vulnerability of the industrialized nations to "economic blackmail" by cartels. Chronic political instability of the Third World further jeopardizes the steady flow of raw materials and has had a profound impact on the economies of the West. The increase in international terrorism has further exacerbated this situation.

In shaping our own military forces these realities must be kept clearly in mind. The U.S. is an island nation dependent on sea lanes for fuel, raw material and trade flows. The U.S.-Western European-Japanese interdependence of markets and products is critical to the economic and political positions of all concerned. In certain cases dependence on raw material imports will not only continue but intensify. This confluence of common interests and dependencies has transformed NATO into an oceanic alliance, of global scope. The U.S. has a major responsibility for preservation of these common interests; a task that requires a presence in the principal oceanic theaters and a credible power projection capability.

Historically, the value of timely action with credible forces tailored to the need is clearly evident. History has also shown that base and overflight rights vanish as crises deepen. It is interesting to note that naval forces have been involved in an overwhelming majority of those occasions in which U.S. military forces were employed as instruments of policy in the last 25 years. This high incidence of involvement results directly from their ready, flexible and mobile character. The U.S. economy and international political position today are increasingly dependent on the existence of these naval forces.

The Fleets with their Fleet Marine Forces constitute this nation's primary military forces for response to distant crises. The Navy/Marine Corps team is a mobile force with the means to exercise sea control, to provide off-shore presence, and to execute power projection and influence. Ready amphibious forces equipped with helicopters, air-cushion landing craft, and amphibian vehicles are not dependent on air facilities, ports and land bases (and their attendant logistical and political complications). Flexible amphibious forces are capable of landing anywhere with precisely the right size and mix of forces to avoid concentrations of hostile forces. Fleet Marine Forces embarked in amphibious shipping represent the ultimate in mobility, flexibility and readiness.

Marine Forces are strategically positioned and rapidly deployable with divisions, supporting aircraft wings, and logistic support groups based in North Carolina, California, and in Japan. These forces are trained, equipped, and prepared to deploy by sealift, airlift, or any combination thereof. Their training, loading, and logistic packaging are aimed at preparing for a single objective - readiness for combat on arrival.

Future threats to U.S. interests may well demand the capability to either seize a port or to create one: only amphibious forces are inherently capable and equipped to do either. Amphibious forces provide for the precise application of force necessary to support political aims. These ready, flexible, and mobile policy instruments are prepared to respond on order of the National Command Authority (NCA).



Prepositioning of supplies and equipment complements strategic mobility. Marine Corps prepositioning programs encompass Maritime Prepositioning (including the Near Term Prepositioning Force now deployed to the Indian Ocean) and land prepositioning planned for Norway. Prepositioning offers a dual capability, both rapid response and rapid reinforcement, and will require a secure environment to marry forces with prepositioned materiel. Fleet Marine Forces have been structured to provide both the strategic mobility and shoreline independence of amphibious forces and the rapid response of airlifted forces in conjunction with prepositioned equipment.

The Maritime Prepositioning Ship (MPS) program is one of the most innovative strategic initiatives of this era. This concept provides for the rapid commitment of highly capable and sizeable Marine forces to crisis areas, and combines the best features of our total force airlift and sealift capabilities.

This crisis response ability to combine forward deployed forces, rapidly prepositioned/airlift configured forces, and MAGTFs in amphibious shipping is a capability uniquely Marine in the U.S. defense establishment. In such a situation, forward afloat MAGTFs can move from current positions, join enroute as required, and be ready upon arrival to secure a port/airfield complex. The MPS brigades, comprised of 16,500 Marines and Sailors, can move by airlift into the airhead/port complex for linkup with their prepositioned equipment and 30 days of supplies.

The MPS program will provide forward deployed, specially designed ships with embarked equipment and supplies to support three brigade-sized MAGTFs. In the near term, the Marine Corps has placed equipment and supplies for one brigade-sized MAGTF aboard Military Sealift Command chartered vessels. This near-term capability will remain on-station until replaced by the more mature MPS task groups. MPS task groups will be comprised of specially designed and outfitted vessels. They will expand our current capability by providing a self-load and off-load system for pierside and in-stream cargo discharge.

In sum, MPS is naval in character and will provide an independently employable force of combined arms which will be capable of stand-alone operations. This provides a wide range of flexible alternatives which will make MPS suitable for preemptive presence or the reinforcement of previously committed amphibious forces.

The sophistication and mechanization of potential adversaries requires increased firepower, tactical mobility and improved command, control and communications systems. The readiness of the Fleet Marine Force must be equal to the battlefield capabilities of potential foes and capable of sustaining operations until a favorable outcome is achieved.

THE MARINE CORPS AS A PART OF THE TOTAL U.S. CAPABILITY

The modern international setting is haunted by the spectre of wars of unprecedented destruction. International relationships are often characterized by tensions which go beyond the ability of one country to control:

- Competition for limited resources,
- Political instability of emerging Third World countries,
- Vulnerability of resource centers,
- Virulent revolutionary movements,
- Proliferation of sophisticated weaponry,
- Continued Soviet military expansion and sponsorship of anti-democratic insurgent movements.

This scene adds poignancy to the oft-repeated dictum:

"The best war is the one we didn't have to fight."

The best way not to have to fight a war is to deter it. Since deterrence is an integral part of our national strategy, it would be well to reflect on the role of the Marine Corps in support of that strategy.

How does the U.S. Marine Corps fit within the national strategy of deterrence? Fundamentally, the Marine Corps' force structure is based upon a careful, objective assessment of both the existing and projected threat; it is complementary to the Nation's foreign policy objectives, and supports the national military strategy devised to deter or, if required, defeat the threat. Considering the international tensions previously mentioned, it is obvious that the U. S. strategy of deterrence tacitly recognizes that an ounce of prevention equals at least a pound of cure. A viable maritime strategy is essential to the deterrent strategy of our island nation. It is within this vital maritime strategy that the U. S. Marine Corps "Total Force In Readiness" makes its contribution to the amount of force this country can bring to bear. Among other things, an "ounce of prevention" requires a potent combination of land, sea, and air forces capable of timely response to developing contingencies anywhere in the world. Simple economics tells us that we cannot have land forces stationed in every geographical location where there may be a potential crisis. That means that when required, we must be ready and able to move appropriate combat power to crisis areas. In this regard, amphibious projection forces of the Navy/ Marine Corps team possess the unique capabilities to meet this global strategic requirement. The seas and their littorals present amphibious forces with a freedom of movement and

capacity for sustainability, timeliness, and endurance that is not dependent upon basing or overflight rights. Furthermore, amphibious forces are self-sustaining and are capable of lifting our heaviest units and most demanding equipment. This, to a large degree, dictates why our overall national military strategy has a maritime foundation.

An amphibious task force with Marines embarked can be deployed over the seas, independent of fragile political agreements or forward basing, to a precise location and can:

- provide deterrence through presence,
- signal our Nation's resolve,
- respond appropriately, should deterrence fail.

The Marine Corps, with the doctrinal and structural flexibility to task organize its force to the mission at hand, with its unique forcible entry capability, and with the means to sustain itself from the sea, provides this Nation with a capability and potential that increases in value in the future.

The Marine Corps' ability to organize for combat rests on the unique structure of our operating forces, the foundation of which is the Fleet Marine Force (FMF). The Fleet Marine Force, organized geographically as Fleet Marine Force, Atlantic (FMFLANT) and Fleet Marine Force, Pacific (FMFPAC) are "type" commands under the operational command of the various Commanders-in-Chief for the two oceanic areas. FMFLANT and FMFPAC are comprised of the Divisions, Aircraft Wings, and Force Service Support Groups which reflect the Marine Corps' legislated structure. The FMFs provide their respective Commanders-in-Chief with specifically "tailored," or task organized, Marine Air Ground Task Forces (MAGTF), as required by the CINC.

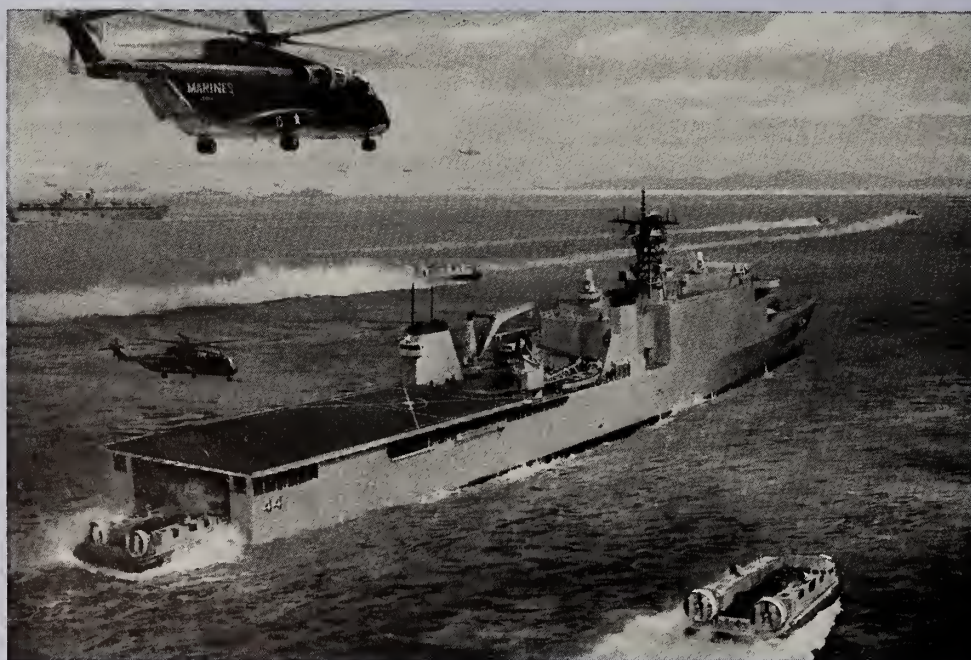
The MAGTFs, the cutting edge of the Corps' operating forces, represent potent and balanced combined-arms, air/ground teams which are sized and organized to be totally mission capable while adhering to the principles of mass, offensive maneuver, security, simplicity, and especially unity of command and economy of force. In keeping with the Marine Corps' fundamental mission of amphibious warfare, MAGTFs provide the landing forces for the fleets.

Nothing perplexes those who would create mischief more than the anxious knowledge that, somewhere beyond the ocean's horizon, there is a Navy/Marine Amphibious Task Force poised and ready to deal with that mischief. The noted strategist and historian, Captain B.H. LIDDELL HART said: "Amphibious flexibility is the greatest strategic asset that a sea power possesses." This has been the steadfast utility of the Marine Corps, the readiness to respond with the capability to do whatever needs to be done with a total, integrated force that is sized to the mission. The Grenada operation is only the latest example of this capability.

This nation will continue to rely on the responsiveness of its Navy/Marine Corps amphibious projection force. It has been said that in any crisis situation the first questions asked by the National Command Authority are:

- Where are the carriers?
- Where are the Marines?

The history of the past 38 years supports that assertion. In the approximately 250 crises to which the United States responded by deploying forces, naval forces have been used in over 200 of these events - and amphibious forces in 80% of those instances. It is fair to assume that the Nation will continue to look to the U.S. Marine Corps as its tested expeditionary force in readiness. It is the traditional role and the charter of the Corps as a vital part of this nation's Total Force.



As a matter of fact, as a result of the establishment of the MPS program, the Marine Corps' capabilities have been significantly enhanced. MPS had added a truly global reach to our projection of force. The MPS squadrons can steam to many of the most critical contingency areas within seven days. Once ashore, an MPS brigade packs the punch and tactical mobility to quickly strike against assigned objectives. This integrated combined-arms team is already trained and organized as a ready "Force Package." It is the most powerful brigade ever formed by the Marines. The brigade arrives with sufficient supplies to fight for an entire month. Little or no strategic airlift is needed to provide sustainability during this period.

Marine participation in the MPS program meets the Commandant's challenge to become even more ready to respond to any assigned

mission. This concept is rapidly becoming a reality. It is a significant advancement in this nation's capability to respond with credible and sustainable forces. MPS reinforces the role of the Corps as this nation's force in readiness. To achieve this level of preparedness, the Marine Corps has made readiness its top operational priority.

To provide the essential structure required to fulfill peacetime missions and to concurrently provide an adequate base for transitioning to wartime requirements, the Marine Corps force structure is built on a Total Force concept. This concept reflects time-phased deployment and mobilization planning factors, and provides a fiscally responsible and operationally responsive balance.

The Marine Corps' current force structure is directed toward providing this nation with three active MAFs and a Reserve Division/Wing Team (DWT). Such a structure conforms to the legislated basis established by Congress in Title 10, USC; however, the internal structure of the Divisions, Wings, and FSSGs comprising our FMF is correctly left to the discretion of the Commandant. This affords the flexibility necessary to meet the challenges posed by a changing threat; to be compliant with DOD guidance; to be responsive to the requirements of the JCS and the CINC's; and to adjust to resource constraints.

The Marine Corps' peacetime force structure, as reflected in the current program, is a balanced, fiscally constrained structure that responds to the Defense Guidance regarding mobilization capability and day-to-day contingency posture which includes forward afloat deployments. It achieves a force balance among combat, combat support, and combat service support functional capabilities. The Marine Corps' contribution to the total force can be expressed as a percentage of the total defense program. For only five percent of the Fiscal Year 1984 DOD budget, this Nation receives the following from the Marine Corps:

- 9% of the active military forces,
- 11% of the general purpose forces,
- 16% of the ground combat divisions,
- 11% of all tactical fighter/attack aircraft.

Truly, this reflects a sound investment in the total force required to assure the success of a vital and potent strategy of deterrence.

In a nutshell: the Marine Corps is postured for global reaction, integrated with the fleet, prepared to rapidly expand forward afloat or committed forces, and capable of integrating all forward forces in theater under a common command, control, and communication system.

THE FMF TODAY

Marines today continue to hone their skills, both individually and as units, to maintain a constantly high state of readiness, and routinely demonstrate that readiness. For example, this last year has seen Marines participating in more than 18 joint or combined exercises, almost half of which were conducted beyond our shores with the forces of foreign countries. Intensive training such as this prepares Marines to respond appropriately to crises of all kinds - as evidenced by the Marines in Lebanon and those who participated in the recent operation in Grenada.

The foregoing is contingent on one quality, readiness. The number one operational priority of the Corps is readiness which encompasses many things. It is the proper molding and blending of these elements that produces true readiness. We all know who does the work, and where the leadership comes from to place all the parts together in the phenomenally complex equation called readiness: it's the people. The Commandant's number one priority is to man the structure of our portion of the force with quality Marines. They are the most critical element to the success of the Corps. Whether it is in the role of assault infantry against a defended beachhead, keeping the peace, or providing humanitarian assistance, our most precious asset in the Marine Corps is the individual Marine. For as long as our history records, he has been and remains the most important, dependable, and flexible weapon system in our arsenal. That is why when it comes to investment in hardware the Marine Corps does not think in terms of "manning the equipment," but rather "equipping the man."

The budget reflects a balanced program of those essential elements necessary to ensure that the Marine Corps remains a viable force-in-readiness for this Country. The ingredients of the program reflect essential replacement of aging combat equipment, a modest increase in manpower, and improvements in the capability to sustain our Marines, once in combat. There are no frills, no exotic equipment, just initiatives to enhance our capability to fight and win.

Major restructuring of our ground units has resulted in MAGTFs that will possess a great deal more "punch per pound." As our smaller, firepower-intensive infantry battalions close with the enemy by LCAC, AAV, helicopter and JVT, they will generate far greater shock action as a result of the introduction of new weapon systems. Each newly reorganized infantry battalion will be equipped with new personal defense weapons, improved M16A2 rifles, a new squad automatic weapon, a shoulder-launched, multipurpose assault weapon, the Mk-19 40mm heavy machine gun, a new light-weight company mortar and the improved M-60 machine gun.

The light armored vehicle (LAV) will add depth and versatility on the battlefield, as well as firepower. LAV battalions, soon to be organic to each to each Marine division, will provide a mobile, hard-hitting, maneuver element to the MAGTF commander's

arsenal of capabilities. LAV battalions will be capable of being transported to an objective area strategically, by sea and air, and tactically, by helicopter. The first light armored vehicle company was activated in July 1983. A battalion of 55 LAV-25s was activated in FY84 at Camp Lejeune, N.C. Currently, we plan that each light armored vehicle battalion will have 145 vehicles as other mission role vehicles are introduced.

Battlefields of the future will be dense with both tanks and armored fighting vehicles. Recognizing this, we are deeply involved in programs to further increase our anti-armor capabilities. Our heavy anti-armor capability, TOW, will double in number and each weapon will have a night sight. Additionally, TOW has been improved with a 5-inch warhead and its range extended to 3750 meters. A second-phase improvement of TOW, with a 6-inch warhead capable of defeating any known enemy tank, will offer increased range and will provide electrical optical countermeasures (EOCM).

Dragon, a medium anti-armor weapon organic to infantry battalions, has been increased in number from 24 to 32 weapons per battalion. One-half of these weapons are soon to have night sights. Also adding firepower to the infantry battalion will be the vehicle or ground-mounted Mk-19, 40mm heavy machine gun, capable of defeating armored fighting vehicles at 2200 meters.

Our aviation modernization effort is vital to providing flexible, responsive and effective support for Marines on the ground. Steady progress is being made in the modernization of light attack and fighter/attack programs. Aviation initiatives directly related to gaining and maintaining relative combat superiority, as well as air superiority, rest with the AV-8B and F/A-18 programs. At present, four full-scale development AV-8B aircraft are currently in flight testing and are producing impressive results. The V/STOL light attack force provides the MAGTFs with a flexible and responsive close air support capability.

The Marine Corps is replacing its aging F-4s in the fighter/attack squadrons with the F/A-18. The first three F/A-18 Marine Fighter Attack squadrons are currently standing-up at MCAS El Toro, California. The capabilities of this superior multi-role aircraft meet the fighter requirements of the modern battlefield as well as provide significant reinforcement for close and direct support of the Ground Combat Element.

The heavy lift helicopter capability is being significantly modernized and improved with the CH-53E helicopter. Presently, two squadrons of CH-53Es are operational. Each aircraft can lift 32,000 pounds, an amount greater than any other helicopter in the free world. This helicopter significantly enhances other on-going mobility and firepower capabilities being added to the MAGTFs.

There is concern over the declining medium lift helo assault capability and Marines look forward to the advanced tilt rotor JVX, a Navy/Marine Corps program with potentially far reaching consequences. JVX meets the need for a 250-knot assault transport that is self-deploying worldwide. Capable of lifting 24 Marines up to 200 nautical miles, JVX will provide increased stand-off for naval and landing forces, the ability to rapidly penetrate deep into enemy rear areas or to bypass adverse terrain, weather or threats. Thus, JVX offers a quantum increase in tactical medium-lift mobility.



The Tactical Air Operation Center (TAOC) is a modular, state-of-the-art air control system that will provide significant improvements in air space control for the MAGTFs. This interoperable air command and control system will also serve as the host for the Joint Tactical Information Distribution System (JTIDS). JTIDS, when fully implemented, will provide real-time exchange of tactical information within the MAGTF and with joint and combined NATO forces.

It is not enough to be "ready" at Camp Lejeune, North Carolina or with forward-deployed forces afloat, and not be capable of projecting and sustaining ready forces across the sea when and where they are needed.

In this respect, the efforts of the Secretary of the Navy, the Chief of Naval Operations, and the Commandant of the Marine Corps to regain clear maritime superiority are clearly justified. The Navy's amphibious shipbuilding program promises revitalization of the amphibious lift capability of the Navy/Marine Team. The lead ship (USS WHIDBEY ISLAND) of at least eight LSD-41 Class ships has been launched, with two more ships on the building ways. The keel for a fourth ship is scheduled to be laid in November 1984. One more LSD-41 Class ship was authorized - with the option

for three more - in the FY 85 defense appropriations. The tentative design for a follow-on LSD-49 class, conceptualized as being based on the LSD-41 hull, but optimized for cargo lift, is being finalized by OPNAV and NAVSEA. The first ship of the LHD-1 Class - designed to support current and evolving amphibious warfare concepts into the 21st Century - is scheduled to have its keel laid in August 1985. The LSD-41, conceptual LSD-49 and the LHD-1 will all have the capability to carry the revolutionary air cushion landing craft (LCAC).

During the initial phase of an amphibious assault it is absolutely essential to rapidly build up combat power ashore from zero to the maximum level. LCACs are well suited to do this. From 25 nautical miles offshore, LCACs land 50 percent more combat equipment and supplies in a given period of time than displacement-hull service craft working with a five nautical mile turnaround. If need be, LCACs can carry their loads across the beach to close-in drop sites. The double plus evident here is both the rapid buildup of combat power ashore and the added protective cushion of stand-off range from the beach for our amphibious ships.



The complementary capabilities of JVT combined with LCAC offer previously unheard of speed and flexibility in a modern amphibious assault. The results present incalculable problems to potential enemies, thus adding significantly to our strategy of deterrence.

Our assault amphibian vehicles, LVTP-7As, the workhorses of the amphibious surface assault, serve to further reduce our vulnerability during the critical ship-to-shore movement and improve our mobility on the battlefield. The assault amphibious vehicle Service Life Extension Program (SLEP) will extend the utility of the LVT-7 into the 1990s.

The reactivation of the USS New Jersey and the Iowa and planned activation of the remaining Iowa class BBs is a promising step toward an improvement in the area of naval gun fire support. Significant enhancements are also being actively pursued in the critical area of medical support. Funding of the T-AH Hospital Ship Program and the Combat Zone fleet hospitals represents a dramatic increase in the bed capacity and surgical facilities that will be available to support amphibious operations.

Modernization is critical. The geopolitical realities of our times clearly indicate the need for our nation to reestablish maritime superiority. In the face of Soviet military expansion and political intervention, seapower represents the linchpin to our deterrence - and to our capability of power projection, should deterrence fail. The Fleet and Fleet Marine Force provide a uniquely capable instrument for response to sea control, power projection and missions dictated by legitimate U.S. and Allied interests. They must be capable of meeting challenges to those interests.



THE MARINE CORPS RESERVE

The mission of the Marine Corps Reserve is to maintain the trained units and qualified individuals required to bring the operating forces and supporting establishment to full wartime capability upon mobilization.

The active Reserve is divided into two categories; the Ready Reserve and the Standby Reserve. The Ready Reserve includes both the Selected Marine Corps Reserve (SMCR) and the Individual Ready Reserve (IRR). At present there are 42,690 Marines in the SMCR, comprising the 4th Marine Division, 4th Force Service Support Group, the 4th Marine Aircraft Wing and 600 Individual Mobilization Augmentees preassigned to mobilization billets. The IRR with its 45,200 reservists and the Standby Reserve with its 2,500 members complete the Active Reserve picture. The 88,000 members of the retired population belong either to the Fleet Marine Corps Reserve or are Regular and Reserve retirees. The retired population will be the primary source of manpower to fill CONUS supporting bases or serve as non-combatants in the operating forces. The Marine Corps Reserve, to include active duty support, totals 113,800.

In the continuing implementation of the Total Force Policy, the most probable employment roles for the Reserve Component are as follows:

- SMCR

- ° Provide trained units to selectively augment the active forces in order to field three MAFs at full wartime structure.
- ° Provide trained units to selectively reinforce the active forces in order to field three MAFs at full wartime structure.
- ° Provide a MAB or, if augmentation/reinforcement is not ordered, a 4th DWT.
- ° Provide a nucleus for reconstitution of a fourth Division, Wing, and FSSG.

- Individual Ready Reserve and Standby Reserve. These individual reservists will be the prime source of individual fillers for active and reserve units. They will be employed to provide qualified individuals to fill shortfalls in active operating forces and reserve units and to expand the supporting base as necessary to meet wartime contingency requirements.

The Marine Corps Reserve represents one-fourth of the structure in the Total Force. While this in itself represents a major impact, further identification of reserve contributions in specific areas is even more instructive and is provided below:

RESERVE TOTAL FORCE CONTRIBUTIONS

40%	Tanks
33%	Heavy Artillery
40%	Beach/Port Opns Capability
25%	Bulk Fuel Handling Capability
67%	Force Recon Capability
100%	Civil Affairs Capability
30%	Light Attack Aviation
14%	Helicopters
24%	Observation Aircraft
33%	LAAM Capability
25%	FAAD Capability

The heart of the Marine Corps Reserve is its manpower. Professionally trained, highly skilled and well educated, these "Citizen Marines" are extremely motivated to accomplish their mission. Manpower programs initiated at the beginning of this decade to increase the size and improve the quality of personnel in the Marine Corps Reserve are now seeing fruition. As stated, at the end of FY-83, Selected Marine Corps Reserve (SMCR) strength was 42,690, a growth of 2,229 over FY-82. Viewed from the beginning of the decade, SMCR strength has increased 28 percent or some 9,393 individuals. Further growth is possible and the current program calls for an end strength in FY-85 of 46,400.

Quality of the SMCR has not been diminished because of rapid growth. Over 93 percent of SMCR personnel are now high school graduates. This percentage continues to increase as a direct result of initiatives within the Marine Corps Recruiting Service.



In a second effort, the Marine Corps Reserve has challenged the Recruiting Service with a recruiting plan more detailed than ever before, pinpointing within each SMCR unit the rank, skill and qualifications required for recruitment. Though the new plan was a major change, from March to September of 1983 the Recruiting Service achieved a 78 percent match for 4th Marine Division requirements. Notwithstanding an even more detailed plan for FY-84, a 98 percent match has been achieved to date. As a result of these of these two management programs, skill mismatch within the Selected Reserve is expected to be resolved.

Reserve Full Time Support (FTS) is a program which contributes significantly to accomplishment of the reserve mission. Highly qualified Marine reservists return to active duty for one to four year periods specifically in support of the reserve. These personnel prepare and administer reserve policies and assist in recruiting, organizing, instructing, and training members of the reserve component. The program is in effect similar to the Formal Schools Programs, in that it helps to further the professional development of the individual reservists. The Reserve FTS program has expanded from 67 individuals in FY-80 to 801 in FY-84. Now assigned to 18 major commands, FTS strength is planned to reach 1129 by the end of FY-85.

Mobilization readiness is the paramount goal of the Marine Corps Reserve. During FY-83, Mobilization Operational Deployment Tests were given to 176 SMCR units, 93 percent of which were found to be fully or substantially ready for deployment. The MCCRES was given to 37 units, of which 90 percent were judged combat ready by active unit standards. Quality training with modern equipment is the primary factor. The current focus is on an increase in reserve participation in active exercises, and in FY-84 approximately 25,000 reservists will have participated in both unit and individual training in major exercises from the Republic of Korea to MCAGCC, 29 Palms to Camp Lejeune. Additionally, nearly 1,600 Individual Ready Reservists, both officer and enlisted, will have trained for mobilization with their active counterparts.

To ensure that sufficient pre-trained individual manpower is available to meet time-phased wartime requirements, a major effort is also underway to expand the number of individuals preassigned to critical mobilization billets, to increase mobilization training and to continue refinement of a management structure capable of administering, training, mobilizing, and discharging individual reservists.

The SMCR is part of the acquisition objective (AO) for equipping the total Marine Corps. This encompasses procurement of the reserve initial issue quantity to include equipment modernization and sustainability. Of the Table of Equipment (T/E) material authorized, SMCR units keep on hand a Training Allowance, which is only that amount of equipment necessary to meet training requirements. While Marine Corps goals of procuring, issuing and maintaining combat standard equipment for SMCR training allowances

are being met, the additional equipment to be held at the Marine Corps Logistics Base in Albany, Georgia or Barstow, California until required, is not yet adequate to satisfy Total Force needs. The FY-85 Presidential Budget and the FY 86-90 program contain sufficient resources to satisfy equipment requirements including sustainability assets for those SMCR units reinforcing in theater by D+60.

Ongoing equipment modernization is outlined in the following table:

<u>Present Equipment</u>	<u>New Equipment</u>	<u>Fielding</u>
M60A1 Tank	M60A1 Rise/Passive Tank	FY-84
LVT7A1	LVT7A1 Product Improvement	FY-84
M16A1 Rifle	M16A2 Rifle	FY-84
M880/M886/M893 Light Cargo Truck	CUCV Truck Cargo, Ambulance and Utility	FY-84
M44 Series 2 1/2T M39 Series 5T	Retrofitted 5T/M900 Series	FY-84
M151 Jeep, M561 GAMMA Goat, M72 & M718A1 Ambulance, M101 & M416 1/4T Cargo Trailers	HMMWV Truck, Cargo, Ambulance Armament, and Shelter Carrier	FY-84
M16A1 Auto Rifle	M249MG, Squad Auto Weapon (SAW)	FY-85
No Present System	M2 MG, .50 Cal	FY-85
No Present System	Motorcycle, Utility	FY-85
No Present System	Mk-19, MG 40mm	FY-85
M123 10T Tractor Truck and Trailer	Logistics Vehicle System (LVS)	FY-85
M101A1 105mm HOW	M198 155mm HOW	FY-86
Nonstandard Shelters	Marine Corps Expeditionary Shelter System (MCESS)	FY-87

STRUCTURE MODERNIZATION AND ENHANCEMENT

Equipment modernization, force expansion, and the development of improved employment concepts have mandated certain structure changes within the Fourth Marine Division and Force Service Support Group. Two additional civil affairs groups will be activated in the division, one fiscal year and the other in FY-85. Upon their activation, the reserve component's three Civil Affairs Groups will represent the Marine Corps entire capability in this area. Another significant change will occur within the infantry regiments during FY-85. Battalions will be reorganized and re-equipped to mirror their changing active counterparts. When this is complete, the firepower of each infantry battalion will have increased, yet the structure will have decreased by 83 enlisted men. Other structure enhancements for FY-85 include activations of a second air-naval gunfire liaison company (ANGLICO), two salvage platoons, and one bridge platoon.

Continuing the momentum beyond the budget year, plans call for a substantial change in artillery organization and equipment.

Reserve direct support artillery battalions will begin reorganizing in FY-86 for receipt of the M198 155mm towed howitzer. An additional sensor control and management platoon is sought in FY-86. An LAV battalion will be structured in the reserve in FY-87 in concert with active force LAV initiatives. Of four TOW platoons to be activated in FY-87, one platoon completes the anti-tank company within the 4th Tank Battalion, while each of the others will enhance an infantry regiment with a superior anti-tank capability. Finally, during FY-88 the reserve artillery regiment will acquire an essential target acquisition battery.

While it is possible for reserve ground modernization to essentially parallel active force development, the high cost of aircraft and related systems dictates a more prudent approach to reserve aviation programming. Nevertheless, enhanced air combat capabilities within the reserve aircraft wing are of the utmost importance. There is concern over aircraft shortages in the aerial refueler squadron (KC-130), and attack helicopter squadron (AH-1). Aircraft models being flown in the 4th Marine Aircraft Wing are aging and in need of upgrade. In response, the Marine Corps has developed a long range Aviation Master Plan which addresses the requirements of Marine Aviation in its entirety. The success of this plan is dependent on continued Congressional support of both active and reserve programs.

The transfer of more advanced aircraft models to the reserve as active squadrons acquire new aircraft is characteristic of this plan. It responds to the requirement for equipping the "first to fight", while ensuring that reserve units are flying the best available aircraft. Reserve fixed wing squadrons are programmed to upgrade to the F-4S and A-4M over the next four years. In the early 1990s, when active fighter squadrons have completed transitioning to the F/A-18, reserve units are to follow suit. The observation squadron and heavy lift helicopter squadron will upgrade aircraft to the OV-10D and CH-53D respectively. Simultaneously with the CH-53 upgrade in FY-92, one of two reserve CH-46 squadrons will transition from medium (HMM) to heavy lift missions (HMH). This will result in the fielding of two CH-53 squadrons and an overall increase in reserve lift capability.

Aircraft shortages in the AH-1 and KC-130 squadrons are being addressed. First, the Marine Aviation Master Plan calls for filling the reserve AH-1 squadron in FY-88. This unit currently has seven of its 24 plane requirement. The change parallels increases in the active force and represents major improvement in the Corps' critically short attack helicopter capability. Secondly, benefitting from Congressional foresight in FY-82, the reserve aircraft wing recently took delivery of four new KC-130T aircraft. These are the first new planes ever delivered to a Marine Reserve Squadron. FY-83 and FY-84 appropriations have also funded a total of four additional KC-130 aircraft toward satisfying this critical shortage.



SECTION II

MANPOWER AND STRUCTURE CONSIDERATIONS

Despite the allocation of significant resources to a long list of modernization and enhancement programs, the Marine Corps has not neglected its most important program -- Marines and their families.

The commendatory performances of this past year by Marines dedicated to their assigned mission and to their Country have been made possible by the exceptional talents and courage of this Nation's young men and women. Our first priority, therefore, continues to be the accession and retention of high quality individuals. Recruiting and retention statistics for FY83 and FY84 bode well for the future and should ensure that the individual, combat-trained Marine remains our most valuable asset.

The paper in this section discusses end strength and structure issues.



END STRENGTH

The determination of the military manpower requirements is a part of the continuous comprehensive requirements determination process which considers national strategy and defense guidance. Early in the process, the analysis is synthesized with traditional functions and missions to describe a capability requirement for the program years which represents a force structure demand for manpower designed for a minimum risk. This minimum risk force is unconstrained by fiscal and manpower limitations, and provides a point of departure from which to measure strength capabilities. Within the Joint Strategic Planning System (JSPS) process, the minimum risk force is refined to a planning force consistent with a reasonable level of risk. This planning force is judged capable of executing the Marine Corps responsibilities for the national military strategy, and represents a mid-range objective described in the current mid-range plan (MMROP) which presumes a peacetime draft and 180 days of mobilization.

The planning force, as a mid-range objective, is further pared down to force levels required immediately for war and against which readiness in peacetime is measured. Such force levels comprise the programmed structure and provide the specific requirements benchmark for program development, as well as for measuring immediate readiness for war. The force structure contained in the current FYDP represents POM-86 programming decisions on force manning, strength achievability, and resource allocation. The FY85 defense authorization includes the resources for an end strength of 198,300.

For POM 86-90, the manpower program supports an increasing end strength profile, improved readiness, and a high degree of fit between billet skill and grade requirements and actual personnel inventory projections. The requirements determination analysis identifies an increasing demand for personnel of higher mental categories to manage and operate new systems, and to maintain more sophisticated equipment. Manpower requirements for such technical skill areas as aviation maintenance, electronics maintenance, data processing, engineering, and avionics were increased in the FY 86-90 program.

The program to support the new requirements attempts first to correct existing skill deficiencies, and then to achieve the new manning levels by sustaining an aggressive retention program and a relatively level non-prior service accession demand. Marine Corps resources have been judiciously applied to further the program objectives.

During the evaluation of manpower supply supportability, certain factors were examined and their impact evaluated. The assessment assumed military pay raises aimed at achieving civilian comparability in order to recruit and to retain quality individuals. Other factors, such as youth unemployment, were also considered in the analysis.

The end strength (E/S) profiles for POM-86 are reflected below (strength 000's):

	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
Officers E/S	20.2	20.3	20.3	20.4	20.5	20.5	20.5
Enlisted E/S	176.4	178.0	179.2	181.3	183.5	183.7	183.8
Total E/S	196.6	198.3	199.5	201.7	204.0	204.2	204.3
Total Manyears	196.1	198.0	200.2	201.4	203.9	204.3	204.6

The profile displayed above reflects the projected end strength growth during the FY 84-90 timeframe. A capped force structure will result in some improvement in the manning of the force.

SECTION III

PREPOSITIONING

This section outlines the Marine Corps position on prepositioning which encompasses both prepositioning weapons and equipment on the ground at strategic locations and maritime prepositioning which involves placing weapons and equipment aboard ships in forward deployed locations. No aircraft are prepositioned in either program. Aircraft self-deploy or are deployed by strategic airlift.



MARITIME PREPOSITIONING

Briefly, this concept enhances Marine Corps capability as a force in readiness by enabling a Marine Air-Ground Task Force to be deployed by strategic airlift and link up with its major weapons systems, combat supplies, and heavy equipment prepositioned in multipurpose cargo ships (TAKX), located near likely contingency areas.

Maritime prepositioning consists of two strategic mobility enhancement initiatives, the Maritime Prepositioning Ships (MPS) program and the Near-term Prepositioning Force (NTPF) program.

- ° The NTPF is comprised of 17 vessels. Six are designated as 7th MAB Outfitting, formerly known as the NTPS, and 11 are depot ships (with two tanker priority to 7th MAB).

- ° 7th MAB, organized to deploy in conjunction with the NTPF, is task organized not only to provide extensive ground tactical mobility and firepower, but also air power through its integral aircraft group.

- ° The MPS program is derived from an August 1979 Amended Program Decision Memorandum and subsequent OSD guidance. It provides for acquisition of ships to afloat preposition selected weapons, equipment, and supplies for three brigade-sized MAGTFs.

- ° Each MPS MAB's equipment will be embarked in four or five specially designed ships which will have Roll-on/Roll-off, breakbulk and tanker capabilities, limited on-board maintenance facilities, and pierside or limited over-the-shore offload capabilities. The equipment will support a MAB heavy in mechanized assets including tanks and assault amphibians.

- ° As a primary mode of rapid response, MPS is designed for unloading in a service port/beach with an airfield in proximity. The concept also provides a means to rapidly reinforce previously committed forces and thus complements an amphibious forcible entry capability.

- ° Current planning and procurement efforts target the first MPS brigade for calendar year 1984, and one additional brigade each in fiscal years 85 and 86. Indeed, MPS-1 materiel onloading began November 1984.

This enhancement of the deployability of Marine forces, which have traditionally been maintained in the highest state of readiness, will provide readily available packages of combined arms for use by the National Command Authorities with a broad range of options.

NORWAY PREPOSITIONING

Prepositioning in Norway facilitates the rapid reinforcement of the critical northern flank of NATO and provides sustainability in selected supply categories by prepositioning selected equipment for a MAB.

This DoD directed program is the Marine Corps' only land prepositioning project and is based upon a bilateral agreement, the Memorandum of Understanding, signed by the U. S. and Norway in January of 1981.

This prepositioning is a strategic mobility enhancement initiative in that it reduces the requirement for scarce strategic airlift necessary to effect rapid reinforcement.

The program involves the prepositioning of selected, additive equipment and 30 days of supply in Norway. Specifically identified for Marine Corps prepositioning are low maintenance, high consumption ground munitions, subsistence items, selected principal end items (PEI), construction and barrier material, selected medical supplies, and requisite repair parts. Associated transportation and storage costs are also included.

A bilateral storage agreement was signed in October 1982, and initial deliveries of equipment and supplies commenced in November 1982 (ground ammunition). Additional deliveries were made in calendar year 1983, and included: aviation ground support equipment, M923 5-ton trucks and M198 howitzers. Delivery plans for 1984 and 1985 have been coordinated with the Norwegians. NATO funding will be utilized to provide permanent storage facilities and reception airfield enhancements. Until those facilities are available, equipment and supplies will be placed in temporary storage provided by Norway.

No Marines will be posted in Norway in support of this program. Maintenance of equipment will be performed by Norway subject to quality control inspection by the USMC.

CG, II MAF has designated 4th MAB as the airlifted MAB for this program for planning purposes. The first exercise of this concept and equipment occurred in Exercise TEAMWORK 84.

Prepositioning in Norway expands the strategic options available for the rapid reinforcement of NATO. The program, when completed, will provide a credible, sustainable force capable of executing current plans with minimal reliance on existing strategic airlift. The program reduces closure time from weeks to days.

SECTION IV

GROUND COMBAT

This section is composed of those program areas associated with the mission area of GROUND COMBAT.

- Mk-19 40mm Machine Gun
- M249 5.56mm Machine Gun
- Shoulder-fired Multipurpose Assault Weapon
- M1A1 Main Battle Tank
- Improved 81mm Mortar
- Light Armored Vehicle
- Landing Vehicle Tracked LVT7A1
- M198 155mm Howitzer
- TOW Improvements Program
- Modular Universal Laser Equipment (MULE)
- Marine Corps NBC Defense
- Personal Defense Weapon
- M60E3 Lightweight 7.62mm Machine Gun
- M16A2 Rifle
- LVT(X)

Mk-19 40MM MACHINE GUN



DESCRIPTION: Crew served, automatic grenade launcher capable of engaging Light Armored Vehicles (LAVs) and infantry from 65 meters to 2200 meters. Weapon weighs 75.6 pounds, will be mounted on the M151 1/4 ton truck as an interim measure until the High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) is fielded. It may be used on the LVTP-7A1. Weapon fires a high-explosive, dual purpose (HEDP) round - the M430 - which can penetrate 2 1/2" of Rolled Homogeneous Armor (RHA). It can also be mounted and fired from the M3 (.50 cal) tripod as pictured above.

<u>PROCUREMENT PROFILE:</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
QTY	200	125	150	189	189	189

WHY IS IT IMPORTANT? The Mk-19 is being introduced to counter the growing numbers of infantry fighting vehicles with which potential enemies are equipping their forces. The addition of twelve Mk-19s in each infantry battalion will increase its organic firepower by 15 percent, and will allow the anti-tank weapons to concentrate their fires on tanks, rather than on LAVs. Maximum effective range of the Mk-19 against point targets is approximately 1600 meters.

WHAT IS THE MARINE CORPS POSITION? Procure the weapon as rapidly as possible.

DEVELOPER/MANUFACTURER: First competitive contract was awarded to Maremont Corporation, Saco, Maine. First civilian produced model will be delivered in January 1985.

M249 5.56mm MACHINE GUN



DESCRIPTION: Individually portable, gas operated, magazine or belt fed, light machine gun that will replace the M16 as the automatic rifle in the fire team. It will increase the firepower of Marine infantry units, with a capability of engaging point targets out to 800 meters, firing the improved, NATO standard 5.56mm cartridge (M855). The Squad Automatic Weapon (SAW) will also be fielded throughout all combat, combat support and combat service support units, as well as Marine Barracks.

<u>PROCUREMENT PROFILE:</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
QTY	1,000	1,000	1,000	1,000	533	-

WHY IS IT IMPORTANT? A weapon which provides aimed and suppressive fire at extended ranges is needed in the fire team. The current automatic rifle does not have the sustained fire and extended range capabilities to provide Marine infantry firepower to equal that of anticipated threat forces. The M249 provides the required improvement in sustained rate of fire (100 rds/minute) and has a maximum effective range of 1000m against area targets. The procurement of this weapon will put the Marine Corps on an equal footing with threat forces equipped with RPK and PK machine guns.

WHAT IS THE MARINE CORPS POSITION? Procurement of the weapon began in FY82. Continue procurement to acquisition objective.

DEVELOPER/MANUFACTURER: Fabrique Nationale of Belgium.

SHOULDER-FIRED MULTIPURPOSE ASSAULT WEAPON
(SMAW)



DESCRIPTION: The SMAW is a man-portable assault weapon to be employed at the rifle company level. It is capable of defeating field fortifications (bunkers), urban targets (concrete/ masonry) and has a secondary capability of destroying light armor. It employs a dual-mode warhead which automatically discriminates between relatively soft targets (earth/logs/sandbags) and hard targets (concrete/masonry/light armor), functioning in the delay mode against the soft targets and in the immediate detonation mode against the hard targets.

<u>PROCUREMENT PROFILE:</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
QTY	600	600	535	-	-	-

WHY IS IT IMPORTANT? The Marine Corps currently does not possess a man-portable assault weapon capable of defeating field fortifications and urban targets. This weapon's secondary capability to defeat light armor allows units to employ their anti-tank weapons against tanks and heavier armor.

WHAT IS THE MARINE CORPS POSITION? Procure the SMAW beginning in FY83.

DEVELOPER/MANUFACTURER: Warhead - NSWC Dahlgren.
Launcher - McDonnell Douglas Astronautic Co., Titusville, FL.

M1A1 MAIN BATTLE TANK
(MBT)



DESCRIPTION: The M1A1 MBT will be an improved version of the Army's M1 which is currently being fielded. The M1A1 will weigh 63 tons but will exert only 13.4 PSI in ground pressure. Like the M1 it will be powered by a 1500 HP air-cooled, regenerative turbine engine. The most significant improvements over the M1 will be the 120mm stabilized cannon, improved armor protection, and NBC protection.

<u>PROCUREMENT PROFILE:</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
QTY	-	-	LLI	268	296

WHY IS IT IMPORTANT? The M60A1, our current MBT, will reach its 15th year of service in the early 1990s. Since the M60A1 embodies basically 1960s technology it is essential that consideration be given to improving our MBT capability. In the early 1990s the M1A1 will represent the most advanced/survivable MBT available. Acquisition of the M1E1 would represent a major upgrading of the armor capabilities within the Marine Corps. Increased armor protection, improved fire control, greater speed and agility, and increased firepower will enhance the combat capabilities and survivability of this MBT.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps will continue to monitor the Army's M1A1 program. Current plans call for the Marine Corps to make an acquisition decision on the M1A1 in FY85.

DEVELOPER/MANUFACTURER: General Dynamics Corporation

IMPROVED 81MM MORTAR



DESCRIPTION: A crew served, lightweight mortar which is highly accurate and provides for a greater range than the current 81mm mortar.

PROCUREMENT PROFILE: FY87 FY88

QTY 350 264

WHY IS IT IMPORTANT? The M29A1 81mm Mortar is reaching the end of its service life and needs to be replaced. The benefits offered by the I 81mm are: extended range from 4500 to 5650 meters, increased weapon lethality and with a noise attenuation can be fired from the LAV.

WHAT IS THE MARINE CORPS POSITION? Pending U.S. Army approval of the weapon system, the Marine Corps will procure a sufficient quantity to replace all of the standard M29A1 mortars on a one for one basis.

DEVELOPER/MANUFACTURER: Royal Ordnance Factories, London, England

LIGHT ARMORED VEHICLE
(LAV)



DESCRIPTION: The LAV family is made up of helicopter-transportable mission-role vehicles (MRV) built on a common chassis. This family will provide the mobility and firepower for the LAV units to be fielded in each division. The basic LAV (shown above) will be a 14.5 ton, 8 x 8 wheeled vehicle mounting an M242 25mm automatic cannon. The LAV will have the capacity to carry six combat-equipped Marines.

PROCUREMENT PROFILE: FY84 FY85 FY86 FY87 FY88 FY89

QTY	236	292	-	-	-	-
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WHY IS IT IMPORTANT? The LAV, in its MRV configurations, will provide a new dimension to the force commander's tactical employment concept. At his disposal, the commander will have a fully integrated combined arms unit possessing significant firepower and tactical mobility. Among the configurations under consideration are the following: Assault Gun (75mm-105mm), Air Defense, Anti-Tank, Mortar, Recovery, Command and Control, and Logistics.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps fully supports the LAV. A Marine Corps Initial Operational Capability (IOC) is scheduled for July 1984.

DEVELOPER/MANUFACTURER: General Motors of Canada

LANDING VEHICLE TRACKED LVT7A1



DESCRIPTION: The LVT7A1 is the result of the Service Life Extension Program (SLEP) of the LVT7. There are three configurations in the LVT7A1 family (i.e., personnel carrier, recovery, and command). In addition to a total rebuild of the LVT7, there are several new improvements incorporated in the LVT7A1. The main improvements include raised headlights, raised commander's station, a new engine, night vision devices, improved suspension, a nonintegral fuel tank and an all-electric weapons station. In addition to the SLEP of the 984 LVT7s, 333 new LVT7A1s will be procured primarily for the Maritime Prepositioned Ships (MPS) commitment. The Initial Operational Capability (IOC) for the first LVT7A1 equipped unit is scheduled for FY84.

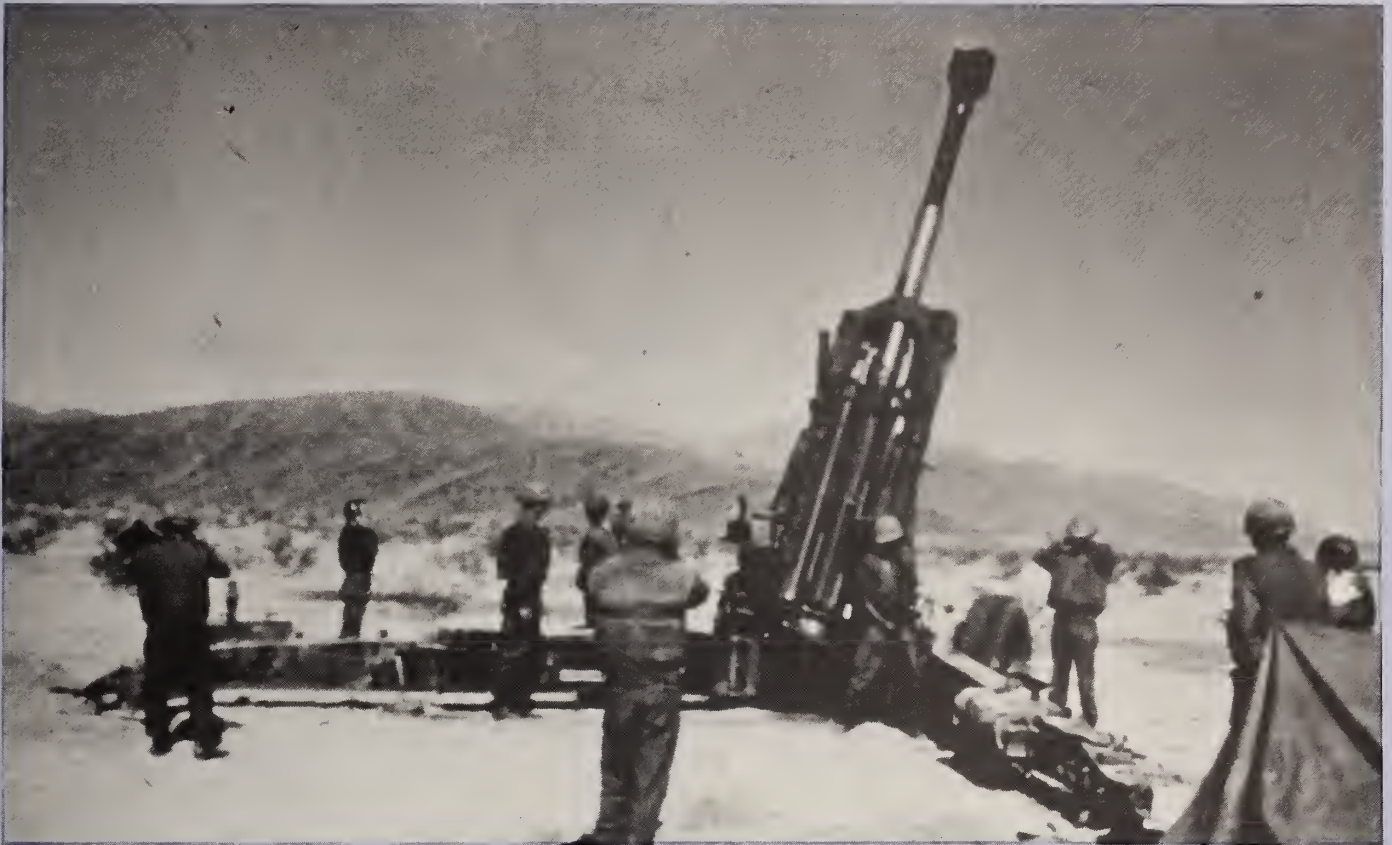
<u>PROCUREMENT PROFILE:</u>	<u>FY81</u>	<u>FY82</u>	<u>FY83</u>	<u>FY84</u>	<u>FY85</u>
SLEP	25	149	307	263	240
New Buys	-	30	146	153	4

WHY IS IT IMPORTANT? The LVT7A1 will replace the LVT7 in providing the lift capability for the surface assault elements of amphibious operations, and in providing armored mobility for subsequent operations ashore. The LVT7A1 will carry 18-25 Marines depending upon their equipment. It will have an operating range of 300 miles on land with a maximum speed of 45mph. At sea, it can operate up to seven hours with a maximum speed of 8mph. Main armament on the LVT7A1 will continue to be the .50 caliber M85 machine gun. The LVT7A1 is essential to insure that the Marine Corps has an effective amphibious vehicle into the 1990s when the follow-on replacement vehicle is expected.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps fully supports this effort as mission essential.

DEVELOPER/MANUFACTURER: FMC Corporation

M-198 155MM HOWITZER



DESCRIPTION: The M198 is a towed 155mm field artillery howitzer. It is constructed of aluminum and steel, and is air transportable by CH-53E helicopter and C-130, or larger fixed wing aircraft. The M198 provides increased range, and improved reliability and maintainability over the current standard towed 155mm M114A2. The M198 will be employed as the primary direct support weapon system in each Marine division, including 4th MARDIV.

PROCUREMENT PROFILE:

	<u>FY80</u>	<u>FY81</u>	<u>FY82</u>	<u>FY83</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>
QTY	154	120	159	-	-	-	25	119

WHY IS IT IMPORTANT? The M198's maximum range of 22,400 meters with conventional ammunition and 30,000 meters using the M549 rocket assisted projectile (RAP) will significantly extend the range, lethality, and counterbattery fires of the direct support artillery battalions. The M198 also provides for system interoperability with the U.S. Army.

WHAT IS THE MARINE CORPS POSITION? Procure the M198 consistent with the current profile.

MANUFACTURER: Rock Island Arsenal, Illinois.

TOW IMPROVEMENTS PROGRAM



DESCRIPTION: This program consists of two phases: (a) Improved TOW (I TOW) which will retrofit 1800 missiles with an improved 5" warhead, and (b) TOW II which will retrofit an additional 2146 missiles with a 6" warhead and also modify the guidance system giving it protection from obscurants and Electronic Counter Measures (ECM). Additional buys of TOW II and AN/TAS-4 night sights are also programmed to complete the acquisition objective which increased due to the force structure initiatives which doubled the number of TOW systems within the USMC.

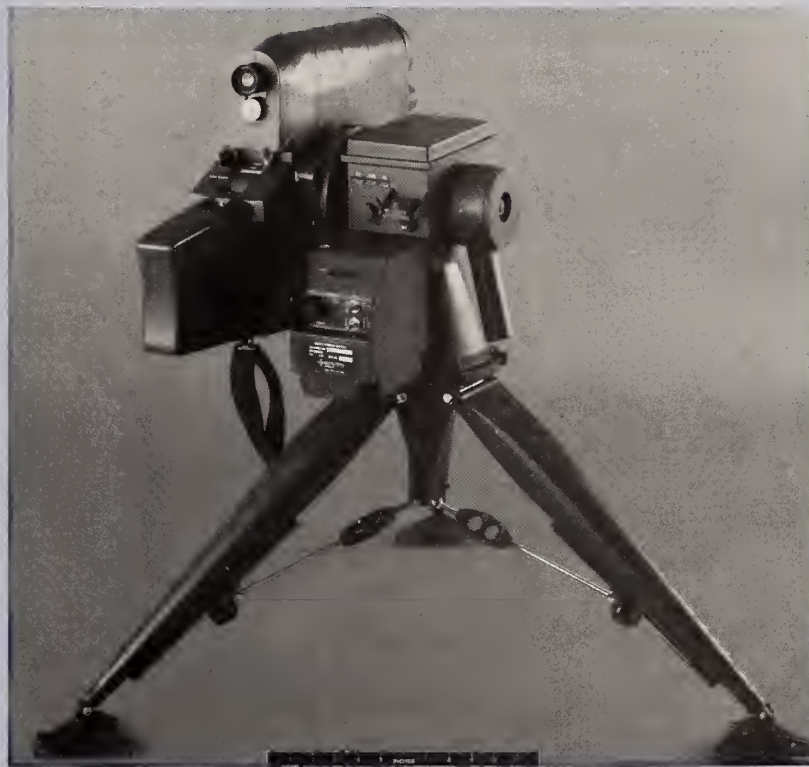
<u>PROCUREMENT PROFILE:</u>	<u>FY83</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
QTY	1000	2200	3822	3336	3933	4254	4417	2732

WHY IS IT IMPORTANT? These improved missiles will permit Marine infantry units to defeat advanced Soviet armor and will enhance Marine infantry's anti-armor capability on the battlefield.

WHAT IS THE MARINE CORPS POSITION? Procure the improved TOW missiles as rapidly as possible.

MANUFACTURER: Hughes Aircraft

MODULAR UNIVERSAL LASER EQUIPMENT (MULE)



DESCRIPTION: The Modular Universal Laser Equipment (MULE) is a man-packed, battery powered, functionally modular device designed to provide forward observers the capability to accurately determine location and range to targets and to provide laser designation for all surface and air-delivered laser guided munitions. The MULE consists of three basic modules. The Laser Designator Rangefinder Module (LDRM) contains the basic laser designator and ranging equipment and is designed for hand-held employment when utilized as an independent unit. The Stabilized Tracking Tripod Module (STTM) provides the stabilization necessary for the tracking of moving targets and targets located at extended ranges. The North-Finding Module (NFM) provides a true north reference.

<u>PROCUREMENT PROFILE:</u>	<u>FY82</u>	<u>FY83</u>	<u>FY84</u>	<u>FY85</u>
QTY	10	115	134	115

WHY IS IT IMPORTANT? The Marine Corps requires a precision laser designator/rangefinder to accurately locate targets, and to provide terminal guidance for laser-guided munitions. The MULE improves the effectiveness of conventional munitions and provides the forward combat elements with the capability of employing air and artillery laser-guided munitions.

WHAT IS THE MARINE CORPS POSITION? Procure the item consistent with the current funding profile to enhance mission performance.

DEVELOPER/MANUFACTURER: Hughes Aircraft Company, LDRM and STTM
Sperry Corporation, NFM

NBC DEFENSE



DESCRIPTION: The Marine Corps NBC Defense Program provides the personal protection, collective protection, decontamination/detection, and warning equipment needed to operate in an NBC environment.

WHY IS IT IMPORTANT? The Marine Corps is marginally capable of performing its mission in a chemical environment. Funding is programmed to procure required equipment, and NBC units within division, wing, and FSSG headquarters have been formed. Primary reasons for this marginal capability are inadequacies in types and quantities of equipment, and deficiencies in training.

Inadequacies are beginning to be redressed by joint funding of research, the development and procurement of new equipment, and improved unit training. Examples of these developments are improvements in chemical agent prophylaxis, air crew survivability upgrades, lightweight decontamination apparatus, a chemical agent contamination monitor, more effective protective clothing, and improved collective protection systems. The Marine Corps closely monitors these efforts.

Planned improvements in Marine Corps capabilities include procurement of improved personal protective equipment,

increasing the capabilities of Marine equipment to operate in an NBC environment, procurement of new chemical agent alarms, and procurement of additional decontamination apparatus.

WHAT IS THE MARINE CORPS POSITION? These programs reflect a mandatory acquisition which will enhance the Marine Corps' NBC posture.

PERSONAL DEFENSE WEAPON (Pistol)

DESCRIPTION: A 9mm, lightweight, double action, automatic pistol

PROCUREMENT PROFILE: FY85 FY86 FY87 FY88 FY89

QTY 9,430 10,000 22,181 22,182 22,182

WHY IS IT IMPORTANT? The weapon will replace the current .38 and .45 caliber pistols which are at the end of their service lives and are no longer logistically supportable. The weapon will provide increased range, lethality, safety, and interoperability within NATO. The new pistol will provide a significant improvement in readiness due to readily available parts and ammunition.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps requires a pistol procurement program.

M60E3 LIGHTWEIGHT 7.62MM MACHINE GUN



DESCRIPTION: The M60E3 is a product improved M60 machine gun. The M60E3 retains all the basic performance characteristics of the standard M60 plus the following improvements: lighter weight (18 vice 23 lbs); a forward pistol grip permitting the gunner to control the gun using the assault fire technique; the bipod is attached to the forward grip assembly vice the barrel allowing a barrel change with the gun still resting on the bipod; the barrel has a quick change handle permitting barrel change without asbestos mittens, and the gas cylinder may be inserted either way.

PROCUREMENT PROFILE: FY82 FY83

QTY 1652 977 Mod Kits

WHY IS IT IMPORTANT? The M60E3 is superior in reliability, maintainability and accuracy, as well as being five pounds lighter than the current model. As the Marine Corps was already procuring additional standard M60s, it is felt prudent to procure a weapon essentially the same, but five pounds lighter.

WHAT IS THE MARINE CORPS POSITION? Procure the weapon as rapidly as possible for the combat forces. Fielding will commence with the training commands in March 1985. IOC for the infantry battalions will be in June 1985.

DEVELOPER/MANUFACTURER: Maremont Corporation, Saco, Maine

M16A2 RIFLE



DESCRIPTION: The M16A2 is a lightweight, air-cooled, gas-operated rifle which is fed from a 20- or 30-round detachable magazine and may be fired from the shoulder or hip, either semiautomatic or burst mode at a cyclic rate of 700 to 940 rounds per minute. The bottom of the trigger guard opens to provide access to the trigger while wearing winter mittens. The rifle will accommodate either the current M193 5.56mm ammunition or the new M855 5.56mm ammunition. The new M855 ammunition will increase both the penetration and the range of the new rifle over the old ammunition (600 meters vice 460 meters).

PROCUREMENT PROFILE:

	<u>FY83</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
QTY	54,725	36,999	29,824	28,186	20,503	19,869	13,288

WHY IS IT IMPORTANT? The M16A2 is being procured to replace the entire inventory of the old M16A1. The following improvements were incorporated into the M16A2, making it a much improved rifle: (1) heavier, more rigid barrel; (2) new round, ribbed handguards made of very hard space-age polyztel; (3) new, slightly lengthened buttstock and contoured pistol grip made of polyztel; (4) a 1 in 7 twist vice 1 in 12 twist barrel to provide greater stability and range for the new ammunition; (5) redesigned rear sight which can be adjusted for windage and elevation using knobs vice detent pens (no nail required); (6) a brass deflector to preclude cartridges from hitting the face of the left-handed shooter; (7) a burst control device which limits the number of rounds fired in the automatic mode to three per trigger pull which will result in increased accuracy while reducing ammunition expenditure; and (8) a muzzle compensator, designed to improve controllability and accuracy in both burst and rapid semiautomatic fire.

WHAT IS THE MARINE CORPS POSITION? Procure the weapon as rapidly as possible to replace the M16A1 on a one-for-one basis.

DEVELOPER/MANUFACTURER: Colt Firearms, Hartford, Conn.

LVT(X)

DESCRIPTION: The LVT(X) is being developed to ensure the fielding of a modern affordable, highly combat-capable family of vehicles to satisfy the requirement for amphibious surface assault against the anticipated threat environment of the 1990s. The LVT(X) will provide an enhanced means of mobility and combat power for the landing force during both the surface assault and subsequent operations ashore. Designs have been developed for personnel, recovery, engineer, communications and assault gun variants. An initial operational capability of 1997 is foreseen.

<u>FUNDING PROFILE:</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
(\$M) RDT&E	24.14	32.90	70.01	81.12	129.53	114.74

WHY IS IT IMPORTANT? A need exists to pursue the conceptual development of the assault amphibian of the future to replace the aging fleet of LVTPs that will be subject to a SLEP this decade. The speed, mobility, firepower, protection and employment flexibility that are required to operate successfully within the threat environment of the 1990s dictate this continued effort.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps just recently conducted a review of this program and elected to continue funding for a Demonstration and Validation phase that will ensure continued effort and the selection of a conceptual design. A contract award is anticipated during the second quarter of FY85.

DEVELOPER/MANUFACTURER: FMC, General Dynamics (Land Systems Div.)
and Bell Textron Aerospace

SECTION V

AVIATION

This section is a compilation of summary papers on the major Marine Corps aircraft and aviation weapon system programs. These papers address modernization and force level issues associated with both tactical aircraft (fixed-wing) and land force aviation (helicopters), as well as an array of anti-armor weaponry, air defense missiles and command and control systems. Profiles for the F/A-18, A-6E, EA-6B and CH-53E programs reflect total DON procurement totals for the Navy and Marine Corps.



AV-8B



DESCRIPTION: The AV-8B is a single seat, transonic, vectored-thrust, light-attack aircraft. The AV-8B is capable of increased payloads, extended range, and offers improved reliability and maintainability over the AV-8A. It is designed with a vertical/short takeoff and landing (V/STOL) capability to provide increased responsiveness to ground force close air support requirements through basing flexibility and high sortie rates. It will be configured with the Angle Rate Bombing System (ARBS) which provides an extremely accurate first pass attack capability and high kill probability through the use of passive Laser Spot or TV tracking. It has the capability to be either land or sea-based on amphibious assault ships.

<u>PROCUREMENT PROFILE:</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
Aircraft (QTY)	27	32	32	36	48	48	48

WHY IS IT IMPORTANT? USMC tactical aviation is required to support amphibious and ground forces in a timely and effective manner. As part of tactical aviation, the missions of the light attack aircraft are close air support and interdiction. These missions are performed by the USMC either independently or as part of an expeditionary force, and require close air support aircraft with operational flexibility. The high degree of mobility inherent in ground combat operation results in rapid changes in the size and location of the battlefield. Consequently, demands for close air support operations frequently occur at considerable distances from established airfields and in terrain that is not suitable for construction of conventional support facilities. Thus, combat air support response times are greater than desirable with conventional aircraft. V/STOL attack aircraft can respond to these combat requirements more rapidly because their flexibility enables them to be based closer to the battlefield.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports a procurement profile providing aircraft for an all V/STOL light attack force of eight operational squadrons and one training squadron.

DEVELOPER/MANUFACTURER: McDonnell Douglas Aircraft

F/A-18



DESCRIPTION: The F/A-18 is a twin-engine, single pilot, supersonic fighter attack aircraft. The aircraft will fulfill both air-to-air and air-to-ground mission requirements. It has the capability to be both land and carrier based. The F/A-18 incorporates state-of-the-art technology such as digital fly-by-wire flight controls, multimode radar, and use of lightweight composites to enhance the combat capability and flexibility of the aircraft. A requirement to add increased night/all-weather capability is currently being developed.

<u>PROCUREMENT PROFILE:</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
Aircraft (QTY)	84	84	84	84	96	122	146

WHY IS IT IMPORTANT? The Marine Corps' requirement for a fighter/attack aircraft has been filled by the F-4 Phantom. These aircraft are among the oldest in the DON. Additionally, the Phantom incorporates 1950s early 1960s technology which seriously hampers its combat effectiveness against current threat aircraft and air defense systems. The F/A-18 has the capability to accomplish the Marine Corps fighter/attack mission and the adaptability to be effective for the next 20 years. The Marine Corps currently has three operational F/A-18 squadrons, each with 12 aircraft. VMFA-314, VMFA-323, and VMFA-531 are all located at MCAS, El Toro, CA.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps fully supports the F/A-18 program.

DEVELOPER/MANUFACTURER: McDonnell Douglas Aircraft Company



CH-53E

DESCRIPTION: The CH-53E is a 3-engine helicopter designed to lift 16 tons over a 50NM combat radius. It has a 79-foot main rotor diameter, seven titanium spar main rotorblades, a 20-foot tail rotor diameter that is canted 20 degrees, and a main gear box qualified to 13,140 shaft horsepower. This shipboard-compatible helicopter, is an assault support aircraft that can be employed for the internal lift and movement of cargo/troops, and for the recovery of tactical aircraft and external lift of equipment and supplies. Fleet introduction commenced in June 1981.

PROCUREMENT PROFILE: FY84 FY85 FY86 FY87 FY88 FY89 FY90

Aircraft (QTY) 11 10 14 12 14 14 11

WHY IS IT IMPORTANT? This helicopter is the Marine Corps' heavy lift assault support helicopter and is an integral part of our present helicopter lift force. The CH-53E satisfies the requirement for the tactical movement of heavy weapons and equipment, and provides lift for amphibious assault, retrieval of downed aircraft and damaged equipment, and support for the V/STOL concept and special operations (evacuations, raids, rescue missions).

The Marine Corps currently has two operational squadrons, each with 16 aircraft. HMH-464 is located at MCAS(H) New River, NC, and HMH-465 is located at MCAS(H) Tustin, CA. A training element activated in October 1983 and the third squadron will be activated in October 1984, at MCAS(H), Tustin, CA.

The Marine Corps has a recognized mid-term requirement for a minimum of six squadrons of CH-53E's to meet the heavy lift demands of a force which will include the M-198 howitzer and its prime mover, division heavy equipment and the Field Logistics Support System. Fiscal constraints have limited procurement to only three squadrons to date.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps plans to continue aircraft procurement throughout the FYDP, which currently reflects a 160-aircraft Department of the Navy (DON) program in support of both Marine Corps heavy lift requirements and Navy mine countermeasure requirements.

DEVELOPER/MANUFACTURER: Sikorsky Aircraft

A-6E



DESCRIPTION: The A-6 is a two-seat, twin engine, long range, versatile, carrier and land-based attack aircraft. It is capable of accurate navigation, and delivery of nuclear and conventional weapons from its 5 external stores stations. It has a moving target indicating system and can provide pathfinder/strike leader function for visual attack planes when required. The A-6E incorporates a new microminuturized digital computer, a solid state weapons release system and a single integrated track and search radar.

PROCUREMENT PROFILE: FY84 FY85 FY86 FY87 FY88 FY89 FY90

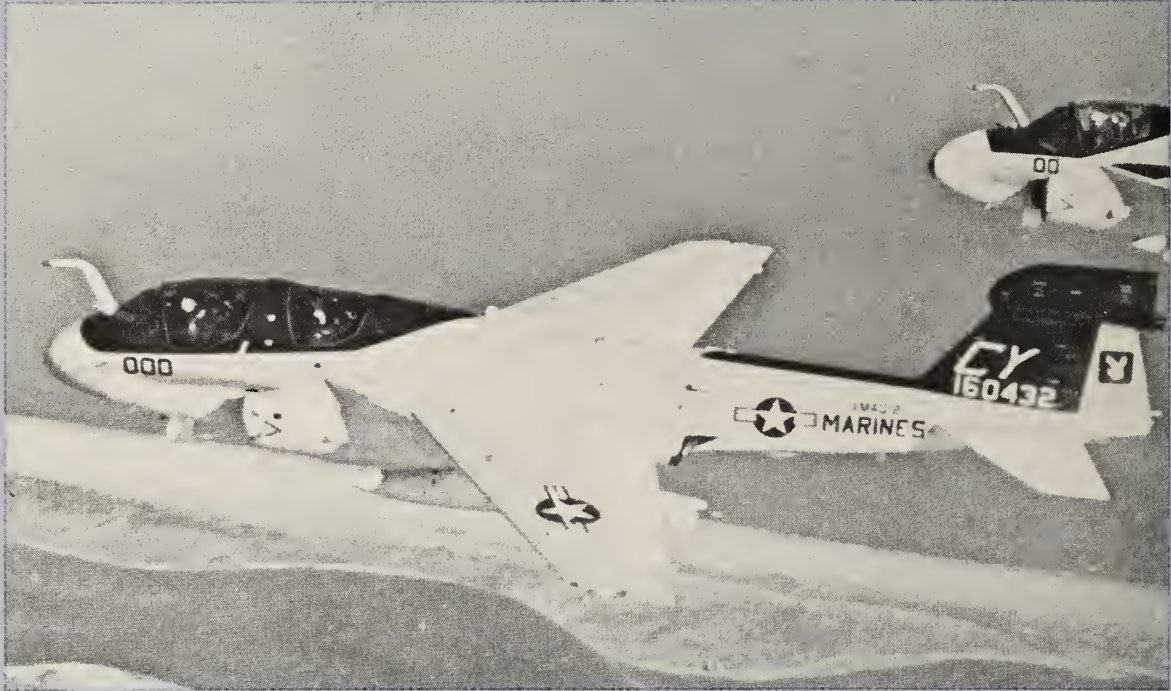
Aircraft (QTY)	6	6	6	6	12	12	12
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WHY IS IT IMPORTANT? At present, the A-6E is the Navy/Marine Corps only all-weather, attack aircraft. Since close air support and interdiction strikes must continue in periods of darkness and under adverse weather conditions, an all-weather attack capability is a vital requirement for Marine Aviation.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports the DON procurement profile.

DEVELOPER/MANUFACTURER: Grumman Aerospace Corporation

EA-6B



DESCRIPTION: The EA-6B is a four-place, twin turbojet aircraft with a fully integrated, computer-controlled electronic warfare system. The aircraft is deployable from austere shore bases or aircraft carriers. The EA-6B's ALQ-99 Tactical Jamming System consists of onboard receivers and up to 5 externally mounted ECM pods, and in combination with the Tactical Electrical Reconnaissance Processing and Evaluation System (TERPES), is capable of providing electronic countermeasures and tactical intelligence support for MAGTF operations.

PROCUREMENT PROFILE: FY84 FY85 FY86 FY87 FY88 FY89 FY90

Aircraft (QTY)	8	6	12	12	9	9	9
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WHY IS IT IMPORTANT? The Marine Corps requires the EA-6B Tactical Electronic Warfare (EW) aircraft to protect and screen USMC strike force and close air support aircraft. This aircraft denies the enemy effective use of early warning, ground control intercept, surveillance/acquisition, and terminal threat (guns & surface-to-air missile) radars. In addition to tactical battlefield jamming support, the EA-6B provides the Marine Corps with a capability for near real-time intelligence input via TERPES to the Marine Air Ground Task Force Commander. The EA-6B is essential to aircraft survival on the modern electronically-dominated battlefield.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps strongly supports a FYDP procurement profile which assures adequate near-term EA-6B force levels, and which builds USN and USMC EA-6B structure to the level required to combat the 1990's threat.

DEVELOPER/MANUFACTURER: Grumman Aerospace Corporation

AH-1T+



DESCRIPTION: The AH-1T+ Sea Cobra is a two-place, tandem-seat, twin-engine attack helicopter capable of land or sea based operations. Its primary missions are armed escort for aerial or ground operations and point destruction of enemy armor. Improvements to the Sea Cobra since initial procurement in 1978 permit it to fire a variety of weapons to include TOW, Hellfire, Side-winder and Sidearm. The 1985/1986 procurement will further incorporate the GE T-700 engine, which will result in a quantum improvement in high/hot operations and safety of flight.

PROCUREMENT PROFILE: FY84 FY85 FY86 FY87 FY88 FY89 FY90
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WHY IS IT IMPORTANT? The AH-1T+ is a Marine Corps attack helicopter and fulfills the requirement to provide enroute protection for our assault helicopters and their on-board troops. Further mission requirements include close-in fire support for landed troops and point destruction of enemy armor. The AH-1 community, due to the versatility of the Sea Cobra, remains heavily committed.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps FY-85/86 procurement is vital to alleviate existing critical inventory shortfalls.

DEVELOPER/MANUFACTURER: Bell Helicopter



JVX

DESCRIPTION: The Joint Service Advance Vertical Lift Aircraft (JVX) is a joint program which will fill the need for common, self-deployable transports. It is designed to provide Marine Corps and Army medium lift troop and logistics support transports; Navy multi-mission aircraft for Combat Search and Rescue, Fleet Logistics and Special Warfare (SEAL) team support; and Air Force long range Special Operations Force transports. JVX will be a 250-knot cruise tilt rotor aircraft, providing the most cost and combat-effective replacement for the fleet of aging medium lift assault helicopters.

PROCUREMENT PROFILE: FY84 FY85 FY86 FY87 FY88 FY89 FY90

Aircraft (QTY)	Long	18	42
	Lead		
	Funding		

WHY IS IT IMPORTANT? The existing inventory of medium lift assault helicopters is declining due to normal attrition. It is not only costly to operate and maintain due to aging, but it also lacks adequate performance for self-deployability and for the execution of over-the-horizon rapid assaults. To meet mission objectives for the 1990's and beyond, replacement assault transports with significantly increased capabilities are required. Deliveries of Marine Corps JVX assault transports are urgently required starting in FY91 to avert a critical shortfall in assault lift capabilities. These modern replacements will provide a quantum increase in strategic mobility and tactical flexibility.

WHAT IS THE MARINE CORPS POSITION? The JVX program, managed by the Navy for the joint services, has an acquisition strategy which is paced by the Marine Corps' urgent need for fleet deliveries during FY91. The Marine Corps position is that delivery of JVX in accordance with that schedule is a vital component of the modernization of Marine Aviation and is required to avert unacceptable assault lift shortfalls in the early 1990s.

DEVELOPER:

GAU 12/U 25mm Gun



DESCRIPTION: The GAU 12/U is a high rate of fire gatling gun capable of firing standard NATO/Army 25mm ammunition. It is under development by General Electric for the AV-8B.

PROCUREMENT PROFILE: FY84 FY85 FY86 FY87 FY88 FY89

OTY 1/ 22 30 40 41 42 9

WHY IS IT IMPORTANT? Firing depleted uranium, armor-piercing and high-explosive projectiles at a high rate of fire, the GAU 12 has wide application against both air-to-ground and air-to-air targets. It will be an invaluable complement to the present and proposed array of anti-armor weapons for Marine TACAIR, and has potential application on attack helicopters.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps strongly supports the GAU 12 for the AV-8B as a multi-purpose gun for anti-armor and air-to-air missions.

DEVELOPER/MANUFACTURER: General Electric

1/ The number of guns purchased each year is dictated by the procurement profile for the AV-8B through the FYDP.

LASER MAVERICK
AGM-65E

DESCRIPTION



Laser Maverick is a short-range, laser-guided, air-to-surface missile for close air support. Laser Maverick consists of a semi-active laser seeker, a 300-pound penetrating blast/fragmentation warhead with cockpit selectable fuze, and a rocket motor with an out-of-line ignition device to satisfy shipboard safety requirements. The warhead, fuze, rocket motor and launcher are common to the Navy's IR attack weapon. Tests have resulted in 15 missile successes for 15 launches.

<u>PROCUREMENT PROFILE:</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
Missiles (QTY)	185	600	1500	1800	1206	-	-

WHY IS IT IMPORTANT? Laser Maverick is the only weapon under development that satisfies the long-standing Marine requirement for a stand-off guided missile for use by TACAIR in close air support. The large (300 lb) warhead and terminal laser guidance give the ground commander the ability to positively identify and destroy a broad spectrum of targets, ranging from heavy armor to fortified bunkers. It can be loaded on the A-4M, AV-8B, F/A-18, and A-6E aircraft.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports the current procurement profile which provides an IOC of FY85.

DEVELOPER/MANUFACTURER: Hughes

GATOR



DESCRIPTION: GATOR (CBU-78) is an air-scatterable land mine weapon. It weighs 500 lbs and utilizes a modified MK 7 (ROCKEYE) container that normally will hold 45 anti-tank mines and 15 anti-personnel mines. GATOR completed TECHEVAL/OPEVAL and received approval for limited production in May 1983.

<u>PROCUREMENT PROFILE:</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
QTY	406	990	990	1380	1463	1448	1435

WHY IS IT IMPORTANT? GATOR is the only near-term weapon that provides the capability to channelize or slow attacking enemy armor beyond the range of artillery. Fast minefield emplacement and adjustable self-destruct times will help the ground commander in rapidly-changing tactical situations.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports a procurement profile starting in FY84 which would provide the GATOR to the FMF in FY85.

DEVELOPER/MANUFACTURER: Aerojet

HELLFIRE

HELLFIRE MISSILE



DESCRIPTION: Developed by Rockwell International, Hellfire is the primary anti-tank weapon for the Army's AH-64. The 100-pound missile will have a semi-active laser terminal homing seeker. Presently entering production with the Army, the Marine Corps will adopt the missile for use on the AH-1J and AH-1T Sea Cobra attack helicopters.

<u>PROCUREMENT PROFILE:</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
Missile (QTY)	219	438	1304	1384	2426	2376	2992

WHY IS IT IMPORTANT? The employment of Hellfire is essential to the success of the Marine Corps' AH-1 helicopter on the high threat battlefield. Hellfire provides an increased standoff capability combined with a considerably improved kill potential over present anti-tank guided missiles. Hellfire's range of 5000 meters compares favorably with TOW's maximum range of 3750 meters. With the indirect fire and lock-on after launch firing modes, Hellfire does not expose the launch aircraft to the enemy during the missile launch and guidance sequence as TOW presently does. Finally, Hellfire's armor penetration/kill potential is greater than that of TOW.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports the procurement profile for Hellfire through the FYDP to insure an anti-armor stand-off capability for Marine attack helicopters.

DEVELOPER/MANUFACTURER: Rockwell International

SIDEARM



DESCRIPTION: SIDEARM is a short-range, self-protection, anti-radiation weapon designed for use by TACAIR and armed helicopters to counter short range air defense systems. The weapon is designed to acquire and track mobile battlefield type threat systems. The SIDEARM program is a joint Navy/Air Force development to modify AIM-9C semi-active radar Sidewinder seekers to detect and home on radar emitters. The concept involves using on-board aircraft defensive ECM (DECM) equipment to provide threat detection and existing Sidewinder circuitry to provide missile lock-on/launch signals for the pilot. The missile hardware includes the modified seekers plus new AIM-9 missile components.

PROCUREMENT PROFILE:

<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
-	-	151	179	155	-	-

WHY IS IT IMPORTANT? The Marine Corps has an approved requirement for a quick reaction, short range, anti-radiation weapon which is compatible with Sidewinder configured aircraft using on-board DECM equipment for threat detection. The mobile, short-range air defense systems represent a significant threat to TACAIR and attack helicopters on the modern battlefield. The SIDEARM, as a complement to the more sophisticated HARM weapon, will provide non-HARM equipped aircraft (AH-1, AV-8B and OV-10) with a point and shoot capability to suppress the close-in tactical threat.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports continued development and procurement of the SIDEARM capability.

DEVELOPER/MANUFACTURER: TBD

HAWK MISSILE SYSTEM



DESCRIPTION: The Improved HAWK missile system is a medium-range, low-to-medium altitude air defense missile system. It is a mobile, helicopter-transportable, all-weather, day and night air defense guided missile weapon system capable of operating in an electronic counter measures (ECM) environment.

<u>PROCUREMENT PROFILE:</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
QTY (missiles)	400	500	433	534	592	608	831

WHY IS IT IMPORTANT? The HAWK is the Marine Corps' primary low-to-medium altitude air defense capability. It is organic to the Light Antiaircraft Missile (LAAM) Battalion which has the assigned mission of providing surface-to-air missile defense of assigned areas of operation, or installations and vital zones, against hostile low and medium altitude air attacks.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps' supports the procurement of sufficient HAWK equipment to TRIAD configure each LAAM Battalion (three firing batteries each with three launcher sections). The Marine Corps also supports the procurement of HAWK missiles to build 60 days of combat sustainability.

DEVELOPER/MANUFACTURER: Raytheon Corporation

STINGER



DESCRIPTION:

STINGER is a man-portable, visually-aimed, shoulder-fired, surface-to-air defense weapon system designed to counter the low altitude air threat. The weapon can engage jet and helicopter aircraft from all aspects,

including head-on, to provide a true point defense capability. STINGER employs a passive infrared homing missile with an advanced guidance system which assures precision intercepts forward of the jet plume of high-speed aircraft. The STINGER system is designed to meet the air threat of the 1980's. It also incorporates an IFF interrogator and advanced infrared countermeasures circuitry.

PROCUREMENT PROFILE:

	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
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QTY (missiles)	691	700	822	2117	2349	2881	2494
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WHY IS IT IMPORTANT? STINGER is replacing the aging REDEYE missile system which has greatly exceeded its seven-year shelf life. Additionally, STINGER will eliminate inherent limitations which currently exist in the REDEYE system. This system provides close-in, low altitude air defense capability for maneuvering combat elements.

WHAT IS THE MARINE CORPS POSITION? The REDEYE missile, because of its age and limitations, must be replaced by STINGER as soon as possible. The success of maneuvering combat elements relies heavily on the STINGER system and its capability to defend against the ever-increasing low altitude threat.

DEVELOPER/MANUFACTURER: General Dynamics

TACTICAL AIR OPERATIONS CENTER



DESCRIPTION: The Tactical Air Operations Center (TAOC) (AN/TYQ-23) is a joint Marine Corps/U. S. Air Force program designed to develop and produce operations modules which, when employed independently or in groups of up to five, provide for air defense and air traffic control and coordination as required by the MAGTF during combat operations.

PROCUREMENT PROFILE: FY83 FY84 FY85 FY86 FY87 FY88 FY89 FY90

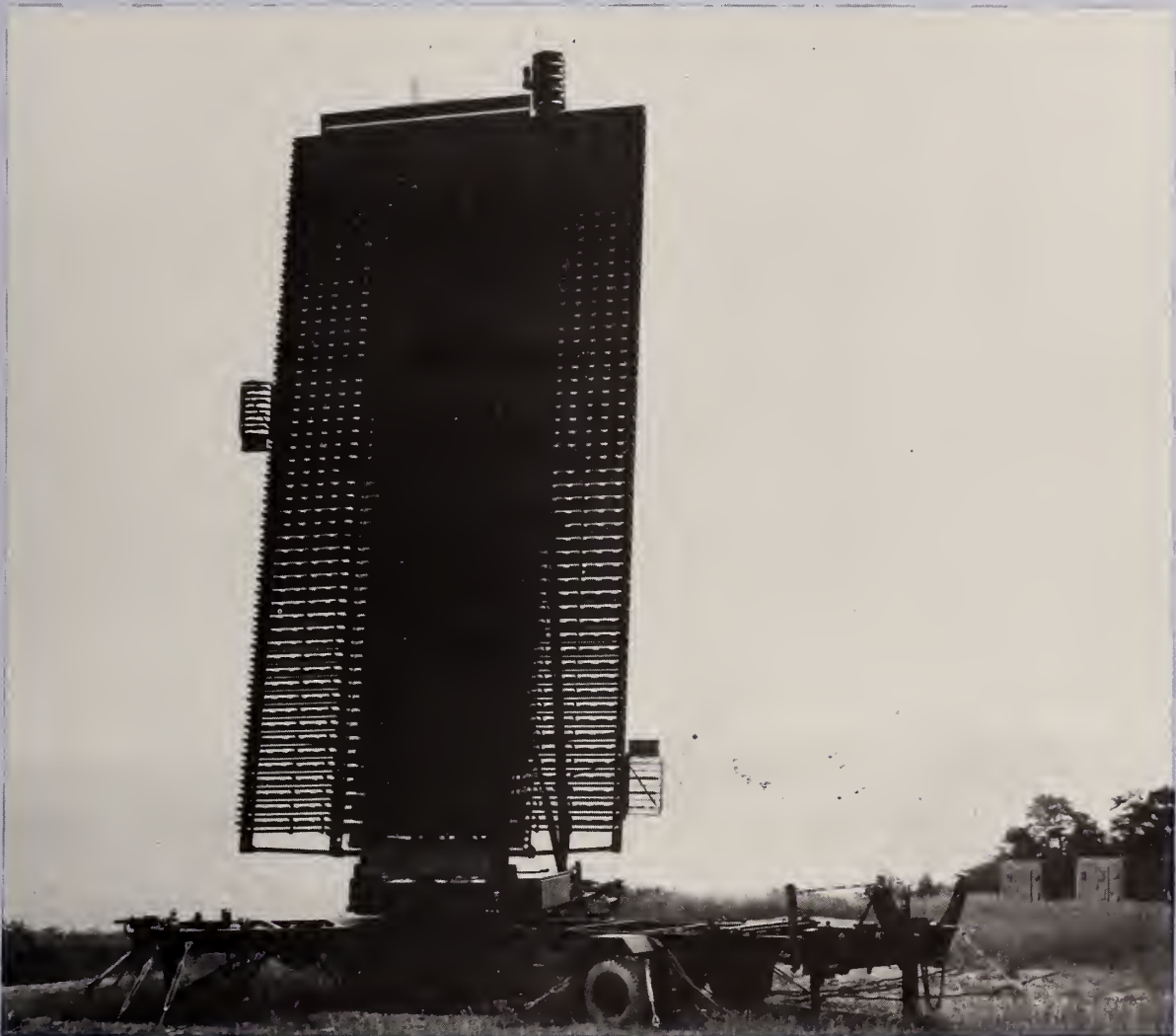
QTY (modules)	-	-	-	4	12	12	12	8
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WHY IS IT IMPORTANT? The TAOC (AN/TYQ-23) program will replace aging equipment which will be logistically unsupportable in 1985 and beyond. The equipment developed is of modular design. This design allows for the phased introduction of capability into an operating area, and a rapid increase in capability with the addition of identical modules. The TAOC program is essential to the USMC deployment concept. TAOC requires fewer technical personnel to operate. It offers training improvements at a reasonable cost and a reduction in the strategic lift requirement. Availability is increased due to improved system reliability and ease of repair. The TAOC Modules will have the operational capabilities to perform the required functions on the modern battlefield. The procurement profile will provide modules required to equip each Marine Air Control Squadron (MACS) with four modules, to improve Tactical Air Command Center (TACC) capabilities, and to support training.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps has submitted the AN/TYQ-23 in the FY86 budget. An IOC of FY88 is planned.

DEVELOPER/MANUFACTURER: Litton Corporation

AN/TPS-59 RADAR



DESCRIPTION: The AN/TPS-59 is a long-range, air-surveillance radar used with Marine Air Control Squadrons.

PROCUREMENT PROFILE: FY83 FY84 FY85 FY86 FY87 FY88

QTY (units) 10 - 6 Decoys 5 Decoys - -

WHY IS IT IMPORTANT? The AN/TPS-59 was developed for the Marine Corps and represents the leading edge of radar technology. The radar is an all solid-state, long-range, three-dimensional, air-search radar that demonstrates a reliability far in excess of equipment in the field today. The radar incorporates a 300-mile capability which is consistent with the operational requirement. The TPS-59 is the primary radar input for the TAOC. IOC is August 1985.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps strongly supports the TPS-59 radar and considers it essential to operations in the high threat sophisticated electromagnetic environment of the modern battlefield.

DEVELOPER/MANUFACTURER: General Electric

AVIATOR'S NIGHT VISION SYSTEM (ANVIS) AN/AVS-6

DESCRIPTION: The ANVIS system provides an image intensifier specifically designed for aviators. The system provides light-weight design, "look-around" peripheral vision, easy installation, and enhances safe aircraft operation during night operations at very low ambient light levels.

<u>PROCUREMENT PROFILE:</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
ANVIS (QTY)	118	449	772	710	493	-	-

WHY IS IT IMPORTANT? ANVIS provides the helicopter aviator the capability, under low ambient light conditions, to fly low and fast almost as if in daylight conditions. This provides a significant capability for night operations in a hostile environment without the use of external light sources.

WHAT IS THE MARINE CORPS POSITION? That sufficient goggles be procured for helicopter aircrews as rapidly as possible. Applications for high performance fixed-wing aircraft are being considered and are under evaluation at this time.

DEVELOPER/MANUFACTURER: Hughes

SECTION VI

COMMAND, CONTROL, COMMUNICATIONS AND INTELLIGENCE

This section outlines command, control, communications, and intelligence (C³I) programs designed to enhance the Marine Corps' capability to perform its assigned mission. The Marine Air Ground Task Force (MAGTF) has a unique C³ capability. MAGTFs are organized, equipped and trained under the concept of unity of command providing the commander complete control over all elements of the MAGTF, including ground combat, aviation and logistics elements. Additionally, the MAGTF is equipped with the capability to provide austere external communications links with the Naval Telecommunications System (NTS)/Defense Communications System (DCS) and with adjacent U.S. or allied units as required.

The Marine Corps is in the process of developing and/or fielding the following new communications and intelligence equipment to support C³I requirements.

° Communications

- °° Marine Integrated Fire and Air Support System (MIFASS)
- °° Position Location Reporting System (PLRS)
- °° NAVSTAR GPS
- °° Tactical Combat Operations (TCO) System
- °° Bancroft, TSEC/KY-67 Tactical Security Equipment
- °° Digital Communications Terminal (DCT)
- °° Joint Tactical Information Distribution System (JTIDS)
- °° Single Channel Objective Tactical Terminal (SCOTT)
- °° Single Channel Ground and Airborne Radio Sub-System (SINCGARS)
- °° Communications Central, AN/TSC-60
- °° TRITAC Switches
- °° Troposcatter Radio, AN/TRC-170(V)3
- °° ADPE for Supporting Establishment
- °° Deployable MAGTF Automated Services Center

° Intelligence

- °° Intelligence Analysis Center (IAC)
- °° All Source Imagery Processor (ASIP)
- °° Forward Pass
- °° Integrated Signals Intelligence System (ISIS)
- °° Electronic Intelligence Support System (ESS)
- °° Advanced Marine Airborne Signals Intelligence (SIGINT) System (AMASS)
- °° Team Portable COMINT System (TPCS)
- °° Mobile Electronic Warfare Support System (MEWSS)
- °° Team Portable Direction Finder (TPDF)

MARINE INTEGRATED FIRE AND AIR SUPPORT SYSTEM (MIFASS)



DESCRIPTION: The Marine Integrated Fire and Air Support System is a selectively automated tactical command and control system that provides for the coordination of mortars, artillery, naval gunfire and direct air support, to achieve more effective and responsive fire support for ground maneuver forces. MIFASS also will provide an automated capability for fire planning with associated weapons and target information management for infantry, aviation and artillery combat operation centers. It will distribute battlefield geometric information such as boundaries, coordination lines and areas, friendly unit locations and air defense data. MIFASS provides a capability for resolving trajectory and flight path conflicts. It provides a means for transmitting time-sensitive target information to appropriate command levels. MIFASS is designed so that selected components may be employed at all echelons of the MAGTF. It will be located at the MAGTF Headquarters, the Division, the infantry and artillery regiments, and at infantry and artillery battalions.

<u>PROCUREMENT PROFILE:</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
QTY	0	1	1	1	1

WHY IS IT IMPORTANT? Current manual operations in the coordination and control of supporting arms create delays in providing fire support to maneuver elements. The manual operations are often characterized by mistakes, delays, and the improper use of supporting arms. The MIFASS will help to overcome these deficiencies. Failure to procure MIFASS will prevent the Marine Corps from having the capability to meet the threat of the 1990s.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps is developing an engineering model and will consider procurement with an initial operational capability (IOC) planned for 1987.

DEVELOPER/MANUFACTURER: The prime contractor is Norden Systems.

POSITION LOCATION REPORTING SYSTEM (PLRS)



DESCRIPTION: PLRS is a joint USA-USMC Program. A system consists of a master station in a mobile shelter, a duplicate alternate master station, and up to 370 user units, which may be man, vehicle, or aircraft transported. The master station has standard military computers and a tactical display. The user has a hand-held user readout that displays position and navigation information and limited free text messages. The System is crypto secure and jam resistant. PLRS will greatly improve tactical operations by providing accurate (30 meters for ground users, 100 meters for air) position location information on friendly units. Small units, vehicles and aircraft will be able to rapidly determine their own position and that of other PLRS equipped units in reduced visibility and featureless terrain. Position location information is automatically reported throughout the network.

PROCUREMENT PROFILE: FY83 FY84 FY85 FY86 FY87 FY88 FY89

QTY (Systems)

Sole-Source	2	2	1	1			
Competitive				1	2	2	2

WHY IS IT IMPORTANT? With these enhanced capabilities, commanders at company, battalion and brigade level will be better able to maneuver their forces and to provide accurate, and timely fire and air support to them.

WHAT IS THE MARINE CORPS POSITION? With the Army as lead service, an initial sole-source, four-year, multi-year contract for the purchase of 11 1/2 systems (6 for the Marine Corps and 5 1/2 for the Army) was awarded on 29 July 1983. The Marine Corps total inventory objective is 13 systems (3 per MAF and 1 system for Software Support and Training). An initial operational capability is planned for September 1986.

DEVELOPER/MANUFACTURER: Hughes Aircraft Company

NAVSTAR GLOBAL POSITIONING SYSTEM (GPS)

DESCRIPTION: The NAVSTAR GPS is a satellite-based radio navigation system that will provide very accurate three-dimensional position and navigation information worldwide. User units will weigh approximately 25 pounds. User equipment in USMC aircraft will be funded by the Navy. The Marine Corps plans to procure 245 man-pack terminals.

PROCUREMENT PROFILE: FY86 FY87 FY88 FY89

QTY 0 186 90 -

WHY IS IT IMPORTANT? User equipment will be procured in man-pack form for use in anchoring the Position Location Reporting System (PLRS) and in providing coverage outside the effective area of PLRS (47 Km X 47 Km). Additionally, NAVSTAR GPS will provide a position/navigation capability for units operating in less than brigade strength such as a MAU or BLT.

WHAT IS THE MARINE CORPS POSITION? Continue to participate in development on NAVSTAR GPS and to procure man-pack user terminals.

DEVELOPER/MANUFACTURER: Collins Radio and Magnavox

TACTICAL COMBAT OPERATIONS SYSTEM (TCO)

DESCRIPTION: The TCO System is a tactical command and control system that provides semi-automated support to the MAGTF. This system will provide selective automated support to assist commanders in the accomplishment of their planning, operations and intelligence functions. The TCO System will provide a capability to receive, process, store, display and transmit information to assist in the accomplishment of the planning, operational control and intelligence functions. TCO will provide planners and decision makers with more coherent, more accurate, and more timely information on which to make necessary plans and decisions. The TCO System will be employed at all echelons of the MAGTF. It will be located in operations centers at all levels of command in the MAGTF.

PROCUREMENT PROFILE: FY86 FY87 FY88 FY89 FY90 FY91-95

Qty	0	0	0	1	1	3
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WHY IS IT IMPORTANT? Without the TCO System, bottlenecks will occur when modern sensor and communications systems overwhelm manual processing capabilities at the command operation centers. The present manual operations of the operation centers are inadequate and antiquated for the sophisticated battlefield of the future.

WHAT IS THE MARINE CORPS POSITION? Develop the TCO system as rapidly as possible in order to reach an initial operational capability in 1989.

DEVELOPER/MANUFACTURER: Norden Systems

TACTICAL SECURITY EQUIPMENT TSEC/KY-67, BANCROFT



DESCRIPTION: The KY-67 is a half-duplex, integrated tactical voice radio/security piece of equipment. The radio portion is VHF/FM, 30-76 Mhz frequency range, providing 1840 radio channels at 25 KHz intervals. The radio is compatible with current and projected VHF/FM radios. It will be utilized as a vehicular (40 watts output) radio. The communications security equipment is compatible with SAVILLE logic cryptographic equipment. The U.S. Navy is the system manager.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
Qty	414	900	1000	1615	633	-	-

WHY IS IT IMPORTANT? Current inventory radios are old, heavy and were not designed to current rigid environmental specifications. The BANCROFT provides a lightweight, secure vehicular radio, ideally suited for Marine amphibious, tracked or LAV vehicles. The radio will provide the communication links required by Marine Corps tactical command and control systems.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps strongly supports this program.

MANUFACTURER: Cincinnati Electronics and Gould, Inc.

DIGITAL COMMUNICATIONS TERMINAL (DCT)



DESCRIPTION: The Digital Communications Terminal (DCT) is a programmable, hand-held, input/output device that operates tactical radios (less PRC-47) and wireline systems. The DCT is compatible with the BANCROFT and VINSON cryptographic systems. The device weighs 4.5 lbs and is 100 cubic inches in size. The DCT provides the operator with the capability to rapidly compose, edit, transmit, receive, and display pre-formatted messages, free-text messages and graphic data. The DCT will expand the capabilities of the following systems with its speed and accuracy:

- Marine Integrated Fire and Air Support System (MIFASS)
- Direct Air Support Central (DASC)
- Tactical Combat Operations System (TCO)
- Command and Control Communications for FAAD Teams
- Tactical Warfare Simulation and Evaluation Systems (TWSEAS)
- Burst Communications

<u>PROCUREMENT PROFILE:</u>	<u>FY83</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
Qty	408	350	232	0	472	960	933	1200

WHY IS IT IMPORTANT? The Marine Corps needs to improve its communications in the areas of reliability, accuracy, and speed. The DCT will provide a quantum improvement in these areas.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps must continue to fund the DCT program.

DEVELOPER: LITTON

JOINT TACTICAL INFORMATION DISTRIBUTION SYSTEM (JTIDS)

DESCRIPTION: JTIDS will provide users with secure, jam-resistant, voice and data communications capabilities. When integrated into a host tactical data system, JTIDS will support high-capacity, near real-time exchange of tactical information and inherent relative navigation, position location, and identification capabilities. The Air Force is developing terminals based on the basic JTIDS technology, Time Division Multiple Access (TDMA). The Navy was authorized by DoD to develop a family of enhanced technology terminals based on Distributed Time Division Multiple Access (DTDMA). Associated with the implementation and employment of JTIDS is the parallel development of Tactical Digital Information Link J (TADIL-J), a message standard being developed by the JINTACCS Program.

<u>PROCUREMENT PROFILE:</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>	<u>FY 91-95</u>
QTY Class 1A DTDMA (36)	0	0	0	16	3	17

WHY IS IT IMPORTANT? Current data communications capabilities supporting tactical command and control information exchange are vulnerable to exploitation and interception and are severely degraded when employed in a jamming environment. JTIDS and TADIL-J will overcome these deficiencies and provide tactical decision makers with survivable, secure, high capacity communications capabilities in support of internal, joint and combined command and control information exchange requirements. If the JTIDS Program is not supported, the joint interoperability capabilities of the Marine Corps, and a significant internal data distribution capability, will continue to rely on outdated and highly vulnerable systems.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps fully supports the expeditious achievement of a joint TADIL-J interface capability. The Marine Corps JTIDS/TADIL-J program is designed as a comprehensive effort to provide tactical commanders across the battlefield with jam-resistant, high capacity, voice and data communications. While the primary emphasis, of necessity, focuses on the TAOC-85 implementation effort, follow-on platform implementations and Marine Corps-unique development efforts cannot arbitrarily be deferred without degrading the total capabilities of the integrated Marine Corps command and control system.

DEVELOPER/MANUFACTURER: TDMA: Singer-Kearfott
DTDMA: TADCOM (Hughes/ITT)

SINGLE CHANNEL OBJECTIVE TACTICAL TERMINAL (SCOTT)

DESCRIPTION: The SCOTT is an Extremely High Frequency (EHF) satellite system that provides mobile, jam resistant communications for critical command and control circuitry. The SCOTT will provide terrain-independent communications with an inherent anti-jam capability. It will ensure continued interoperability with USA, USAF and USN forces in the midterm.

<u>PROCUREMENT PROFILE:</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>	<u>FY91-95</u>
QTY	4	6	6	14

WHY IS IT IMPORTANT? It is anticipated that present satellite systems will be jammable in a wartime environment. As a result, without SCOTT, range limited and terrain dependent portable HF equipment would have to be used. MAGTFs may not have compatible satellite communications with other services; thus the MAGTF and its major subordinate command elements will not have an interoperable tactical satellite system for communications with other services.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps will monitor both Army and Navy EHF programs to ensure interoperability.

DEVELOPER/MANUFACTURER: HARRIS

SINGLE CHANNEL GROUND & AIRBORNE RADIO SUB-SYSTEM (SINCGARS)

DESCRIPTION: Developed to replace all VHF/FM man-pack and mobile tactical radio communications currently in the Marine Corps inventory, SINCGARS will provide anti-jam communications in the frequency range of 30.00 to 87.975 MHz and 25 KHz channel spacing. It is mission flexible for voice or data, plain or cipher text and remote control operation. Utilizing the combination of low, medium and high power selections and its frequency hopping ECCM capability, SINCGARS has the additional feature of providing a low electronic signature which eludes enemy direction finders.

<u>PROCUREMENT PROFILE:</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>	<u>FY91-95</u>
QTY	6150	6150	6150	6167

WHY IS IT IMPORTANT? If not procured, the Marine Corps will be forced to rely on radio equipments which are over 20 years old and which are also becoming logistically unsupportable. The present inventory of VHF/FM radios are very vulnerable to exploitation and interception and are severely degraded when operated in a jamming environment. Moreover, the Army has discontinued purchase of existing VHF/FM radios, therefore precluding the procurement of replenishment spares and components. SINCGARS will also accommodate interoperability in Joint and Combined operations.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps strongly supports this program.

MANUFACTURER: ITT

COMMUNICATIONS CENTRAL AN/TSC-60(V)7

DESCRIPTION: The AN/TSC-60 will provide two channels of voice and/or data communications in the High Frequency (HF) range, 2.0 to 29.999 mhz. Users will be able to send and receive traffic at the same time over either channel. The AN/TSC-60 will provide communications from the Marine Air-Ground Task Force (MAGTF) command post to its major subordinate elements, for communications out of the Amphibious Objective Area (AOA), and communications within the Air Combat Element (ACE). The AN/TSC-60 is already fielded in the Air Force and Army. The requested PMC dollars are strictly for hardware procurement with no software involved. Built-in design features allow the system the option of adapting such modern HF communication techniques as selective calling, receiver scanning, link quality analysis and anti-jam implementation.

PROCUREMENT PROFILE:

	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
QTY	0	15	30	30	27

WHY IS IT IMPORTANT? The Marine Corps satellite architecture will not have an easily deployable nor reliable long-haul HF radio to supplement the communications provided by Tactical Satellite Communication Systems.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps strongly supports this program.

DEVELOPER/MANUFACTURER: Rockwell International

TRI-TAC SWITCHES



DESCRIPTION: The TRI-TAC switches are a family of switches being developed under the cognizance of the Joint Tactical Communications (TRI-TAC) Office. They include the SB-3865, AN/GYC-7, and AN/TTC-42.

SB-3865 - A 30-line automatic telephone switching unit stackable to 90 lines. It is team transportable and will service the new family of digital telephones. It will be used at battalion and higher levels within the FMF.

AN/GYC-7 - A 12-line automatic tactical message data switch providing secure switching of digital data. It will be configured into 3 two-man transportable packages and will be utilized at regiment and higher levels in the FMF.

AN/TTC-42 - A 150-line transportable, shelterized, automatic switching central capable of servicing digital and analog loop circuits and digital trunks and interfacing with the SB-3865. It will be operational within the communications battalion, communications squadron, division communications company, FSSG communications company, and artillery regiment.

<u>PROCUREMENT PROFILE:</u>	<u>FY83</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
QTY (SB-3865)	-	-	20	48	120	112	102	89
(GYC-7)	-	-	-	-	90	67	0	0
(AN/TTC-42)	-	-	14	6	19	17	16	14

WHY IS IT IMPORTANT? The Marine Corps is transitioning from manual, analog, unsecure switches to automatic, digital, cryptographically-secure capabilities. The TRI-TAC switches will provide all of the next generation of USMC switches.

WHAT IS THE MARINE CORPS POSITION? The USMC supports the SB-3865 and AN/TTC-42 programs and will make a procurement decision on the unit level message switch in either FY86 or FY87.

MANUFACTURER: ITT

TROPOSCATTER RADIO, AN/TRC-170(V)3

DESCRIPTION: The AN/TRC-170 troposcatter radio will provide the capability for Super High Frequency (SHF) transmission and reception of multichannel digital voice and data traffic. The AN/TRC-170(V)3 will be used at MAF, Div, Wing and FSSG levels, providing cross-service interoperability. It will replace the AN/TRC-97 and AN/GRC-201 radios. The AN/TRC-170 will provide troposcatter transmission capability for 32 channels of bulk encrypted voice, record and data traffic.

<u>PROCUREMENT PROFILE:</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>	<u>FY91-95</u>
QTY	-	-	43	41	44	62

WHY IS IT IMPORTANT? If the AN/TRC-170 is not procured, it will be necessary to retain the present AN/TRC-97 in service well beyond its service life. The AN/GRC-201 will not adequately accommodate the expected traffic volume to be generated within the all digital, TR-TAC communication system. In addition, the capacity of multichannel and switching equipment at higher headquarters will be exceeded.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps strongly supports this program.

DEVELOPER/MANUFACTURER: Raytheon

AUTOMATED DATA PROCESSING EQUIPMENT FOR THE SUPPORTING
ESTABLISHMENT (ADPE-SE) PROGRAM

DESCRIPTION: The ADPE-SE Program is designed to replace obsolescent data processing equipment at 21 Marine Corps Supporting Establishment sites. The Program includes replacement of current source data automation devices (i.e., Scan-Data Systems), remote job entry devices, computer output microfilm equipment, and stand-alone computer systems used as remote job entry devices. Replacement systems will vary in size and capabilities from simple interactive terminals with low-speed printers, to large remote job entry systems capable of handling large volumes of batch output and performing independently if necessary. Communications front-end processors and computer output microfilm equipment will also be installed as the result of the ADPE-SE Program.

<u>PROCUREMENT PROFILE:</u>	<u>FY83</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
Communications Front-end Processors	5	3	-	-	-	-	-
Computer Output Microfilm Equipment	-	10	-	-	-	-	-
Interactive Terminals	-	200	200	-	-	-	-
Minicomputer Systems	-	11	10	-	-	-	-

WHY IS IT IMPORTANT? The automatic data processing equipment currently installed is old, unreliable, and expensive to maintain. In most cases, current equipment lacks sufficient capabilities to support new Marine Corps automated information systems currently under development. Many sites do not have any interactive data processing capability. This equipment will be installed to support users throughout the Marine Corps.

WHAT IS THE MARINE CORPS POSITION? The ADPE-SE Program is essential to the development and implementation of on-line, interactive automated information systems and is a priority ADP acquisition in the FY 83-85 time frame.

DEVELOPER/MANUFACTURER: It is anticipated that the communications front-end processors will be purchased from the NCR/COMTEN Corporation. Manufacturers of equipment falling in the other categories are yet to be determined.

DEPLOYABLE MAGTF AUTOMATED SERVICES CENTER

DESCRIPTION: This program provides a capability for organic automatic data processing support for major MAGTF units when deployed.

The concept of a self-contained, van-mounted data processing capability will be tested during deployment exercises in FY84 and FY85. The results of these tests will be analyzed and refined to develop competitive specifications so that nine deployable MASCS can be procured.

The MASC replacement is directed toward a capability to support new Automated Information Systems (AISs) while deployed (e.g., M3S, REAL FAMMIS).

<u>PROCUREMENT PROFILE:</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
QTY	-	-	3	6	-	-

WHY IS IT IMPORTANT? Operation of Class I systems (standard AISs in use Marine Corps-wide) for deployed Marine Corps units must be supported by a deployable MASC, similar in function to the Automated Service Centers supporting non-FMF units.

MASCS must have the capability to rapidly relocate to provide data processing support to deployed MAGTFs. MASCS depend upon the Marine Corps Central Design and Programming Activities (MCCDPAs) for programming and technical support. As the MCCDPAs transition to new operating systems and new AISs are implemented, support of the newer AISs will require an increased processing capacity.

WHAT IS THE MARINE CORPS POSITION? This program is essential to Marine Corps management and AIS operations in a deployed or combat environment. It will be the highest priority acquisition of automatic data processing equipment in the FY85-86 timeframe.

DEVELOPER/MANUFACTURER: It is anticipated that the automatic data processing equipment (ADPE) will be acquired from the IBM Corporation while the trailers/vans will be acquired from the U. S. Army. A separate contract will be issued to integrate the ADPE into the trailers/vans.

INTELLIGENCE ANALYSIS CENTER (IAC)

DESCRIPTION: The Intelligence Analysis Center (IAC) is a semi-automated tactical intelligence system which is the heart of the Marine Air Ground Intelligence System (MAGIS). It will be employed by the Marine Air-Ground Task Force intelligence staff to process large quantities of information into intelligence, quickly disseminate that intelligence, and more effectively manage the collection effort. Information from other MAGIS subsystems such as the Imagery Interpretation (II) segment, the Tactical Electronic Reconnaissance Processing and Evaluation (TERPE) segment, the Integrated Signals Intelligence System (ISIS) and the All Source Imagery Processor (ASIP), as well as information from external agencies will be received and processed by the IAC into useful, timely intelligence. The IAC consists of modular segments housed in mobile, air transportable shelters which can be moved by organic MAGTF assets.

<u>PROCUREMENT PROFILE:</u>	<u>FY82</u>	<u>FY83</u>	<u>FY84</u>	<u>FY85</u>
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QTY	4	2	1	-
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WHY IS IT IMPORTANT? Recent developments in communications, reconnaissance, surveillance, and target acquisition techniques and equipment have greatly increased the capability of the FMF and external agencies to collect information of an intelligence nature. The IAC will provide the FMF with the capability to process, correlate, and disseminate this increased volume of information.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps has purchased six systems to support three Marine Amphibious Forces (MAFs), two Marine Amphibious Brigades (MABs), and training and software support requirements.

DEVELOPER: Naval Surface Weapons Center, Dahlgren, VA

PRODUCTION CONTRACTOR: American Development Corporation (ADCOR),
Charleston, SC

ALL SOURCE IMAGERY PROCESSOR (ASIP)

DESCRIPTION: The All Source Imagery Processor is a mobile ground processing facility designed to receive and exploit sensors (Side Looking Airborne Radar (SLAR), Infrared (IR), and Electro-optical (EO)), carried on reconnaissance aircraft (RF-4B, F/A-18(R)), as well as imagery received from national and theater sources.

PROCUREMENT PROFILE: FY89 FY90 FY91

QTY 2 4 2

WHY IS IT IMPORTANT? The current Marine Corps capability for processing and exploiting imagery is dedicated to hard copy (film based) products. The thrust of technology is to soft-copy, digital imagery data linked from the sensor platform to the processing facility. Soft-copy imagery exploitation allows the photo interpreter to extract much more information than is normally attainable in film-based imagery. Data linked digital imagery, soft-copy, computer-enhanced image exploitation and the increasing amount of digital imagery expected to be available in the future, requires that the Marine Corps move forward in the acquisition of a mobile ground processing facility able to be deployed with the MAGTF.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps will purchase eight systems to replace the Imagery Interpretation Facilities at the three Force Imagery Interpretation Units and for training and software support.

DEVELOPER/MANUFACTURER: Goodyear Aerospace Corporation, Phoenix,
AZ (Advanced Development Model)

FORWARD PASS

DESCRIPTION: Forward Pass is a ground sensor data storage and relay device which works in conjunction with the Marine Corps Tactical Remote Sensor System. It consists of storage, interrogation, and display units.

° The storage unit is emplaced by hand or high speed aircraft along with the unattended ground sensors. It collects and stores data from sensors and can be commanded to operate in various modes from real-time relay to burst transmissions.

° The interrogation unit is pod-mounted on high-speed aircraft with a control box in the cockpit. A readout command is sent from the aircraft to a particular storage unit. Upon command, the unit either transmits its stored data to the interrogation unit, where it is recorded, or data linked to a ground site. Other cockpit-generated commands include relay (go to real-time relay mode), store, reset (erase data, go to new storage sequence), or a combination of these.

<u>PROCUREMENT PROFILE:</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
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QTY	-	1	2	-
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WHY IS IT IMPORTANT? Forward Pass provides a capability to obtain remote sensor derived intelligence without the need for continuous monitoring and solves the RF line of sight relay problem. Its principal use will be in amphibious operations during the time intervals preceding the assault phase. The concept is to employ remote sensors in the amphibious objective area (AOA) days or weeks preceding the prospective operations.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps will procure three Forward Pass systems, one in FY87 and two in FY88.

DEVELOPER/MANUFACTURER: Naval Aviation Center, Indianapolis, IN

INTEGRATED SIGNALS INTELLIGENCE SYSTEM (ISIS)

DESCRIPTION: The ISIS currently under development is a modular, transportable, semi-automated system for communications intercept, direction finding, and tactical SIGINT analysis and reporting. This system integrates mini/microcomputer processing with current intercept receiver and radio direction finding (DF) technologies. The ISIS is intended to replace all existing transportable communications signal intercept and DF equipment in the Radio Battalions. ISIS provides each battalion with four intercept DF, SIGINT analysis and reporting equipment combinations, and three additional SIGINT analysis and reporting sets. An intercept DF, SIGINT analysis and reporting equipment combination consists of three Communications Collection Outstations (CCO), and a Stand Alone Analysis Subsystem (SAAS). This combination could support a Marine Amphibious Brigade.

<u>PROCUREMENT PROFILE:</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
QTY: CCO	-	-	-	11	13	-
SAAS	-	-	-	-	9	5

WHY IS IT IMPORTANT? With the advent of increased battlefield electronics usage and the increased tempo of combat, the Marine Corps considers computer assistance to tactical SIGINT, as incorporated in the ISIS, to be crucial to future Radio Battalion SIGINT support to MAGTF commanders. If the ISIS is not available in the field in the late 1980s time frame, the Marine Corps will no longer have a viable SIGINT direct support capability.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps has a vital requirement for tactical SIGINT direct support at battalion level and above. This support must be tailored to the battlefield commander's intelligence needs during all phases of amphibious operations and subsequent operations ashore.

DEVELOPER/MANUFACTURER: Sanders Associates Inc., Nashua, NH

ELECTRONIC INTELLIGENCE SUPPORT SYSTEM (ESS)

DESCRIPTION: The ELINT Support System (ESS) is a modularized, semi-automated, transportable, tactical ELINT system capable of intercepting, locating, analyzing, and identifying enemy ground-based, noncommunications emitters. The initial development system will consist of three ground-based, ELINT Collection Outstations (ECOs) mounted on an organic Radio Battalion tactical vehicle. Each ECO is a computer-controlled, monopulse, precision Line-of-Bearing (LOB) and signal identification system designed to operate as a stand-alone system. It provides information on target emitters within its field of view directly to the Stand Alone Analysis Subsystem (SAAS) segment of the Integrated Signals Intelligence System (ISIS). System capabilities include an airborne collection platform (ACP) to be digitally netted with the ground system. The ACP will collect, analyze, process, and distribute data to the ground-based ECOs for signal correlation, analysis, and reporting.

PROCUREMENT PROFILE: FY87 FY88 FY89 FY90

QTY:	ECO	3	7		
	ACP			3	5

WHY IS IT IMPORTANT? The FMF Radio Battalion presently does not possess the capability to perform collection or exploitation of noncommunications threats. The ELINT system previously used in the FMF, the AN/TSQ-76, was issued on an interim basis pending development of an advanced system. It was obsolete in design, inadequate in frequency coverage, difficult to maintain, and lacked the mobility required to provide and maintain timely support to the MAGTF. It was deleted from the inventory in 1975.

WHAT IS THE MARINE CORPS POSITION? Employment of the ESS will fill a critical gap in the Marine Corps requirement to provide tactical Signals Intelligence (SIGINT) direct support at battalion level and above.

DEVELOPER/MANUFACTURER: UTL Corporation, Dallas, TX

ADVANCED MARINE AIRBORNE SIGINT SYSTEM (AMASS)

DESCRIPTION: The Advanced Marine Airborne SIGINT System (AMASS) is a highly mobile, tactical ground terminal for use with remotely controlled airborne SIGINT sensor platforms. AMASS will provide real-time signals intelligence to the MAGTF Commander. Critical SIGINT data would be sent directly to the Tactical Air Operations and Command (TAOC) centers for immediate combat decisions.

<u>PROCUREMENT PROFILE:</u>	<u>FY90</u>	<u>FY91</u>	<u>FY92</u>
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QTY	2	2	2
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WHY IS IT IMPORTANT? Although the Marine Corps possesses a limited non real-time ELINT ESM capability in its fixed wing EW Squadron, the bulk of cryptologic direct support to the Air Combat Element is provided by the ground-based Radio Battalion. AMASS will provide highly perishable information from dedicated, other service, and national airborne SIGINT systems reconnoitering in the area of operations.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps has the requirement to provide SIGINT data to all elements of the MAGTF. AMASS will fill a critical gap in the Marine Corps to provide Signals Intelligence beyond the ranges now capable by ground-based SIGINT collectors.

TEAM PORTABLE COMINT SYSTEM (TPCS)

DESCRIPTION: The Team Portable COMINT System (TPCS) is a highly mobile man- or team-pack system capable of performing automated collection, direction finding, processing, analyzing, reporting, disseminating and collection management functions.

PROCUREMENT PROFILE: FY89 FY90 FY 91-95

QTY 1 6 17

WHY IS IT IMPORTANT? TPCS will be a logical continuation of current man-pack receiver and DF system acquisition efforts and will fill a void in current SIGINT direct support efforts, especially in the initial amphibious landing phase.

WHAT IS THE MARINE CORPS POSITION? The Radio Battalions are to provide timely and accurate tactical SIGINT to the supported commander. This support is currently performed by independent systems that are tied together via secure communications. TPCS will provide flexible intra/intersystem communication and a micro-processor terminal that will enable the Radio Battalions to provide support to smaller MAGTFs (e.g., MAU) when larger systems are not available or appropriate.

MOBILE ELECTRONIC WARFARE SUPPORT SYSTEM (MEWSS)

DESCRIPTION: The Mobile Electronic Warfare Support System (MEWSS) is lightly-armored, mobile and provides both electronic support measures (ESM) and electronic countermeasures (ECM) in support of tactical operations. The MEWSS will intercept, determine line of bearing (LOB), and degrade enemy tactical AM and FM radio communications in the 20 to 500 MHz range.

<u>PROCUREMENT PROFILE:</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
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QTY	-	3	5	4
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WHY IS IT IMPORTANT? The Marine Corps currently has no lightly-armored or mobile electronic warfare capability. The MEWSS will provide the ability to support mobile operations, both in the amphibious objective area and subsequent operations ashore.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps will procure 12 systems.

DEVELOPER/MANUFACTURER: TBD

TEAM PORTABLE DIRECTION FINDER PIP

DESCRIPTION: The Team Portable Direction Finder (AN/PRD-10) PIP is a lightweight, rapidly deployable, intercept and radio direction-finding system. The AN/PRD-10 provides accurate intercept and a radio direction-finding capability to support Fleet Marine Force tactical operations.

PROCUREMENT PROFILE: FY88 FY89

QTY	4	20
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WHY IS IT IMPORTANT? The AN/PRD-10 (PIP) will provide the capability to inter-net with the ISIS DF baseline and provide a frequency extension to increase its intercept capability.

WHAT IS THE MARINE CORPS POSITION? The AN/PRD-10 (PIP) meets the requirement for Radio Battalion equipment to be interoperable with ISIS and provide more timely and accurate reporting to the MAGTF commander.

DEVELOPER/MANUFACTURER: TBD

SECTION VII

LOGISTICS

This section describes Marine Corps programs which are designed to provide MAGTF commanders with the necessary logistics support to carry out their assigned mission.

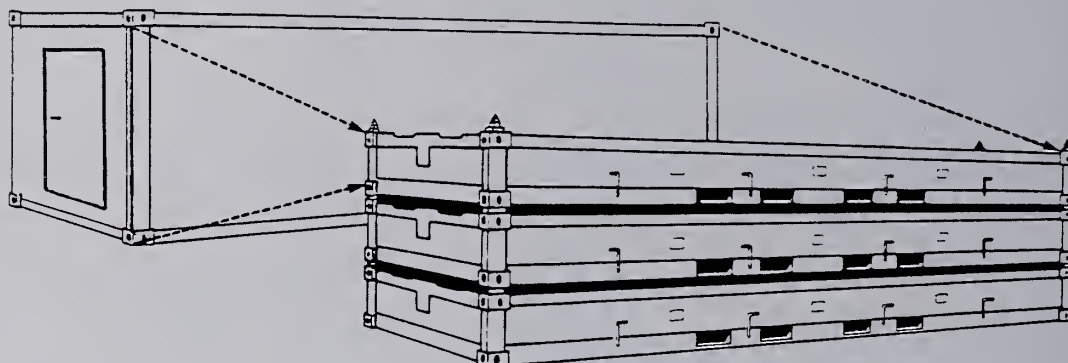
The most comprehensive of the programs is the Field Logistics System (FLS). The Marine Corps FLS is an integrated program which provides intensive life cycle management of selected combat service support equipment to assure success in logistically supportable amphibious operations, while exploiting the benefits of containerization. The system is designed around international dimensional standards in order to be able to use all modes of transportation, especially the container-capable merchant fleet. Major subsystems of FLS are shelters, containers and material handling equipment. The goals of the system are to reduce manpower; to lower equipment acquisition, logistics support costs, and shipping space requirements; and to decrease training needs while enhancing the effectiveness of the logistics support system and the readiness posture of Marine Corps amphibious forces.

In addition to FLS, the Marine Corps has other programs designed to improve the Marine Corps' capability to provide logistics support to the MAGTF commanders.

The logistics equipment addressed in this section are:

- Marine Corps Expeditionary Shelter System (MCESS)
- Intermediate Size Containers
- 5-Ton Truck (Product Improvement) M939 Series
- High Mobility Multipurpose Wheeled Vehicle (HMMWV)
- Logistics Vehicle System (LVS)
- Crash Fire Rescue Vehicle
- Medium Girder Bridge (MGB)
- Lightweight Amphibious Container Handler (LACH)
- Fuel Distribution
- Reverse Osmosis Water Purification Unit
- Water Supply Support System

MARINE CORPS EXPEDITIONARY SHELTER SYSTEM (MCESS)



DESCRIPTION: MCESS consists of a small and large shelter family. The Small Shelter Family consists of an 8' x 8' x 20' General Purpose Rigid, a General Purpose Knockdown, and an Electromagnetic Interference Shielded (EMI). Also included are an 8' x 8' x 10' EMI, a Complexing Kit, and a Joining Corridor. Small Rigid Shelters are fabricated of aluminum paper honeycomb panels. They can be transported on container ships, are lightweight, have a long service life, and have been approved as standard DOD shelters. The Large Shelter Family is in development. The family will consist of soft structures in sizes suitable for aircraft maintenance, vehicle maintenance, and supply storage facilities. First procurement of these shelters is scheduled for FY-88.

SMALL SHELTER FAMILY

<u>PROCUREMENT PROFILE:</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
QTY	690	-	1080	482	310	210

WHY IS IT IMPORTANT? The MCESS is a family of expeditionary tactical shelters, joining corridors, and complexing kits which provide environmental protection for designated functions in support of USMC operations worldwide. The family is composed of shelters which can function in units of one or be complexed together to serve any function desired or required. The shelters will provide maintenance and warehousing facilities primarily for combat service support organizations. They can be used for medical, maintenance, communications, and various service support functions.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports the DOD standardization efforts to develop common shelters. The Marine Corps small rigid shelter family has received DOD approval.

MANUFACTURER (Prototype): Small Shelters: Brunswick Corporation
(Prototype): Large Shelters: SPAN, INC., RUBB, INC.

Technical drawing of a mobile office unit. The main unit is shown with dimensions: 6' 10" (height), 20' (width), and 6' 7" (depth). A worker is standing next to the unit, which has a large door open on the left side, revealing internal compartments. A smaller unit is shown above the main unit, with dimensions 6' 10" (height) and 20' (width). A small box is shown in the bottom right corner.

PROCUREMENT PROFILE:	FY84	FY85	FY86	FY87	FY88	FY89	FY90
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QTY	0	119	4900	10270	11250	11225	8068
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WHY IS IT IMPORTANT? These containers will provide a weatherproof, secure storage and transport function for organizational property and consumable supplies. They are durable (15-year life expectancy) and can be arrayed to conform to international transport standards. The containers are essential to the combat readiness of all Fleet Marine Force units.

WHAT IS THE MARINE CORPS POSITION? These containers substantially enhance the deployability of FMF units. They will eliminate the labor-intensive requirements currently driven by existing wooden mount-out boxes and pallets. Their addition to the Marine Corps inventory will decrease mount-out response time and lessen manpower considerations (now required for box fabrication and maintenance).

MANUFACTURER: Engineered Air Systems Inc.

5-TON TRUCK (PRODUCT IMPROVEMENT) M939 SERIES



DESCRIPTION: The M939 5-ton truck series consists of cargo, tractor, dump, and wrecker variants. The vehicles are equipped with a diesel engine, automatic transmission, complete air brake system, three-man cab, and a tilt hood.

<u>PROCUREMENT PROFILE:</u>	<u>FY83</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>
QTY	1041	1014	610	399	329	-

WHY IS IT IMPORTANT? These 5-ton 6x6 trucks are a product improvement of a truck introduced into the Army in 1970. The Marine Corps did not acquire the older vehicle but maintained a fleet of 5-tons procured in the 1960 time frame. These vehicles have exceeded their life expectancy and require immediate replacement.

WHAT IS THE MARINE CORPS POSITION? The current fleet of M39 5-ton vehicles are overage, obsolete and maintenance-degraded. Additionally, current assets can only satisfy 47% of Marine Corps mission requirement due to critical T/E shortages.

HIGH MOBILITY MULTIPURPOSE WHEELED VEHICLE (HMMWV)



DESCRIPTION: The HMMWV is a multipurpose 5/4-ton high mobility vehicle that is equipped with 4-wheel drive. There are four HMMWV variants: the TOW/weapons platform, utility, ambulance, and the shelter carrier. It has a common chassis, a diesel engine, and automatic transmission.

<u>PROCUREMENT PROFILE:</u>	<u>FY83</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>
QTY	1546	3838	3123	4832	700	-

WHY IS IT IMPORTANT? The HMMWV will be the primary tactical vehicle for combat and combat support units. Its primary functions will be to support troop and weapon transport, weapons platform, reconnaissance, fire support, medical evacuation, and command, control and communication applications. This vehicle will have a 5/4 ton capacity and will replace all current 1/4, 1/2, 3/4, and 5/4-ton trucks and 1/4-ton trailers.

WHAT IS THE MARINE CORPS POSITION? This vehicle satisfies an urgent requirement to replace current overage vehicles. Further, it will provide an improved anti-armor platform capability (TOW missile). The acquisition of this vehicle is a top priority of the Marine Corps.

DEVELOPER: AM General.

LOGISTICS VEHICLE SYSTEM



DESCRIPTION: Consists of a front-powered unit and four interchangeable rear units, eight-wheel drive, diesel engine, and automatic transmission. It is articulated, has a 60" fording capability without fording kit, weighs 26000 lbs. and has 85 percent commercial parts.

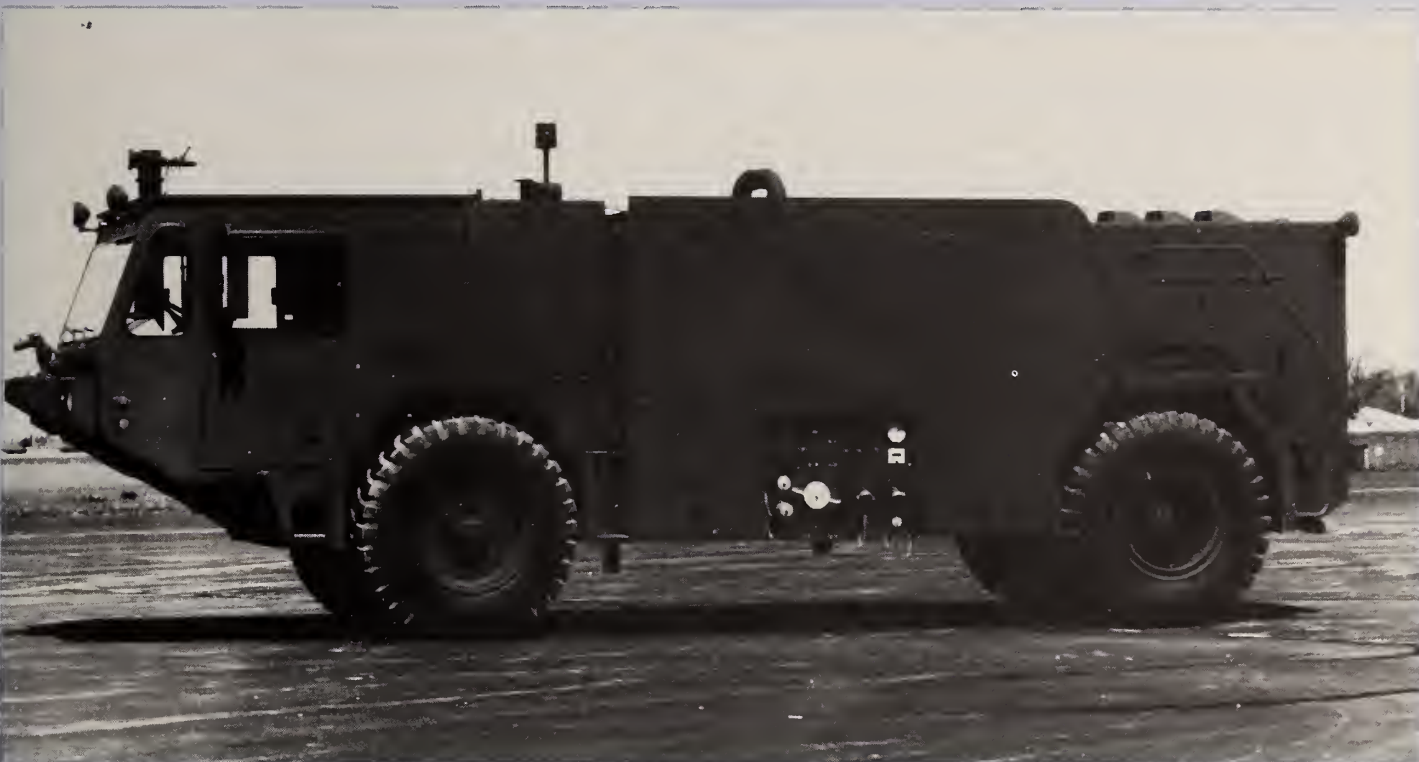
PROCUREMENT PROFILE: FY83 FY84 FY85 FY86 FY87 FY88

QTY	131	148	354	360	443	-
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WHY IS IT IMPORTANT? The Marine Corps Logistic Vehicle System (LVS) is a family of combat support vehicles designed to replace overage, oversize, diverse, and T/E deficient items with a tractor and four interchangeable rear body units (container and cargo trailers, recovery trailer unit and fifth wheel). LVS is air-transportable and its dimensional standardization permits container ship transport. LVS design features provide enhanced cross-country mobility required to move weapons systems and provide logistics support for operating forces.

WHAT IS THE MARINE CORPS POSITION? This vehicle system must be procured to support the mobility requirements of the operating forces. Required operational capabilities cannot be maintained with current motor transport equipment.

CRASH FIRE RESCUE VEHICLE (C/F/R)



DESCRIPTION: The Crash Fire Rescue vehicle is a four-wheel, four-wheel drive, 1000-gallon capacity, rear-mounted diesel engine-powered truck.

<u>PROCUREMENT PROFILE:</u>	<u>FY83</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>
QTY	21	12	18	6	-	-

WHY IS IT IMPORTANT? The C/F/R vehicle provides mandatory safety requirements for passengers, crew, cargo, and aircraft arriving and departing from tactical and garrison airfields. This is a joint acquisition effort designed to reduce program costs and to provide these vehicles at the earliest possible time. This vehicle will fill T/E deficiencies and replace obsolete, overage assets.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps must procure this vehicle in order to properly support the full spectrum of flight operations (training, passenger/cargo, and tactical expeditionary operations).

DEVELOPER/MANUFACTURER: OSHKOSH Truck Corporation

MEDIUM GIRDER BRIDGE (MGB)



DESCRIPTION: Lightweight, hand-erectable, easily transportable, and rapidly employable girder-type bridge constructed of welded aluminum alloy.

<u>PROCUREMENT PROFILE:</u>	<u>FY83</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
QTY	23	8	-	6	10	6	-

WHY IS IT IMPORTANT? Provides lightweight, easily transportable, two-girder deck bridge capable of supporting class 60 loads of wheeled or tracked vehicles across 100-foot spans or 162-foot spans when employed with link-reinforcing set.

WHAT IS THE MARINE CORPS POSITION? MGB can be handled by four- or six-person teams. It requires no heavy equipment for erection, and can be stored and transported in ISO-configured containers. Distinct advantages over existing bridges include reduction of transport requirement, reduction in construction time, reduced logistics support problems, and reduction in personnel required for erection.

MANUFACTURER: Fairey Engineering Ltd., UK

LIGHTWEIGHT AMPHIBIOUS CONTAINER HANDLER (LACH)



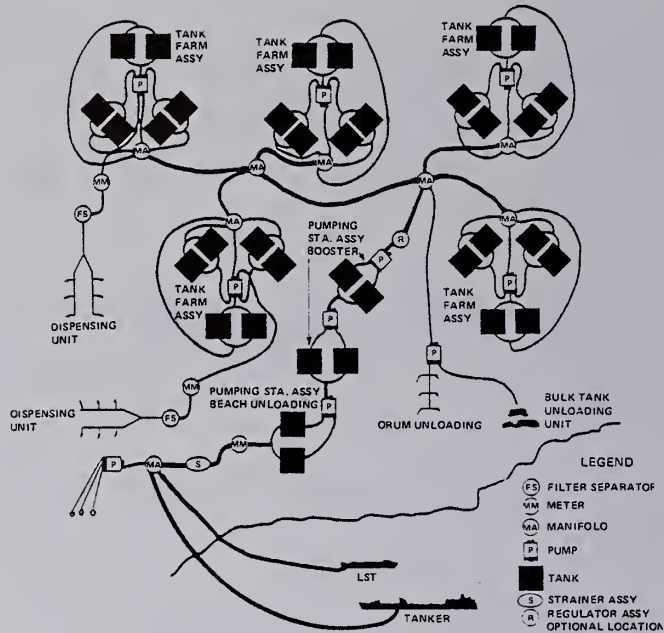
DESCRIPTION: The Lightweight Amphibious Container Handler (LACH) is a towed straddle-lift crane designed to be used at the surf line during amphibious operations.

WHY IS IT IMPORTANT? The LACH can be maneuvered through 5-foot surf from the beach into small landing craft to pick up 8 1/2' x 8' x 20' containers, weighing up to 44,800 lbs, and offload them onto logistics trailers for movement inland. The LACH can be used in place of or as a supplement to other shoreside container transfer systems and may also be employed at inland storage areas for routine container handling. The LACH will normally be used at any time that the Navy's elevated causeway is inoperative or when the input to the beach exceeds that of the elevated causeway.

WHAT IS THE MARINE CORPS POSITION? Marine Corps dependency upon the use of merchant shipping for the Assault Follow-on Echelon (AFOE) during amphibious operations and the dramatic changes of merchant ships from breakbulk to containerships have forced the Marine Corps to containerize a large percentage of the AFOE cargo. The LACH will provide a capability not presently available in the Marine Corps inventory.

MANUFACTURER: General Crane and Hoist, Inc., Savannah, Georgia

FUEL DISTRIBUTION SYSTEM



DESCRIPTION: The fuel distribution system consists of Amphibious Assault Fuel System (AAFS), Tactical and Fuel Dispensing System (TAFDS), and Helicopter Expedient Refueling System (HERS). TAFDS provides a system capable of receiving, storing, and dispensing aviation fuel in tactical airfield operations. AAFS provides a system capable of receiving, transferring, and dispensing gasoline, diesel, or jet fuels from the high water mark of the amphibious beachhead to inland distribution points. HERS provides a helicopter transportable fuel dispensing system capable of refueling helicopters operating forward of established air facilities.

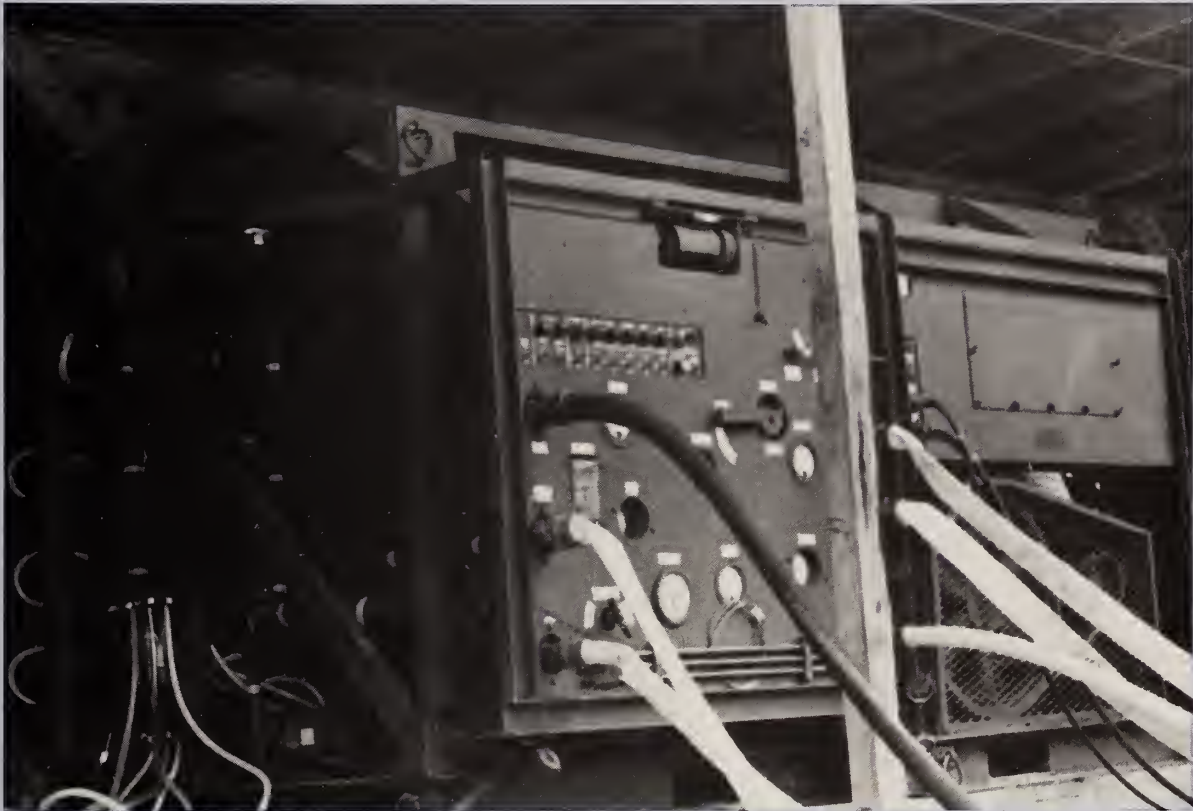
<u>PROCUREMENT PROFILE:</u>	<u>FY83</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
TAFDS QTY	10	5	15	-	-	-	-
8 AAFS QTY	8	4	7	-	-	-	-
HERS QTY	6	8	15	6	-	-	-

WHY IS IT IMPORTANT? A requirement exists to furnish 1,000,000 gallons per day of fuel in support of a Marine Amphibious Force in a combat situation. These systems are currently in the Marine Corps inventory.

WHAT IS THE MARINE CORPS POSITION? A series of research and development efforts are in progress or planned that will result in the introduction of improved components for the systems currently in use. Additional systems are required to support maritime pre-positioning ships and to equip activated cadre companies, both regular and reserve.

DEVELOPER: U. S. Marine Corps

REVERSE OSMOSIS WATER PURIFICATION UNIT



DESCRIPTION: Self-contained unit ISO configuration in 8' x 8' x 10' shipping frame.

PROCUREMENT PROFILE: FY83 FY84 FY85 FY86 FY87 FY88 FY89

QTY 116 - 50 125 125 31 -

WHY IS IT IMPORTANT? Designed to produce potable water for the Fleet Marine Force from fresh, brackish, and salt water sources. The unit has the ability to process NBC contaminants. The rate production is 600 gallons per hour, based on a 20-hour day. Production rate is a relationship to total dissolved solids content, temperature, PH, and pressure.

WHAT IS THE MARINE CORPS POSITION? This unit will replace four different types of water purification equipment currently in the Marine Corps inventory which have reached the end of their life expectancy.

DEVELOPER/MANUFACTURER: Univox of California (frame by Superior Industries). Designed by U. S. Army, MERADCOM, Fort Belvoir, VA.

WATER SUPPLY SUPPORT SYSTEM

DESCRIPTION: The "Stand Alone" Water Supply Support System is a joint U. S. Marine Corps and U. S. Army project which consists of equipment currently in service and new procurement items. This system is designed for the production (drilling wells, deep well development), transportation, storage, distribution, and cooling of water for a Marine Amphibious Brigade.

<u>PROCUREMENT PROFILE:</u>	<u>FY83</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>
QTY	2	1	1	-	-

WHY IS IT IMPORTANT? The requirement exists to furnish 330,000 gallons of potable water a day in support of the MPS Brigade.

WHAT IS THE MARINE CORPS POSITION? There are continuing research and development efforts to achieve improved components for this system. This system will be a vital component in support of the Maritime Prepositioning Ships Brigades.

DEVELOPER/MANUFACTURER: Components of this system are produced by various manufacturers. The components were selected and type classified by the U. S. Army, MERADCOM, Fort Belvoir, VA.

SECTION VIII

NAVY PROGRAMS AND SUPPORT

This section is divided into two subsections. The first subsection contains a series of point papers and program summaries that focus on naval support requirements for amphibious power projection. The lead paper entitled "Sealift to Support Force Projection" gives an overview of the sealift required to support this nation's maritime strategy, and the concerted efforts of the Navy/Marine Corps Team to maximize the capability of our naval power projection forces. This paper is followed by papers on amphibious lift, MPS, strategic sealift, and shipbuilding programs.

The second subsection focuses on programs in the critical area of medical support for amphibious operations. Medical support programs are rapidly progressing. A \$20 Million deficit for FMF medical outfitting was halved in FY82. Each MAF can now care for 20,000 casualties -- and state-of-the-art medical equipment has been added to the inventories. As the Marine Corps has validated its need for additional medical personnel, SECNAV has increased end strength to meet that need. Two hospital ships have been approved and that program's contract awards are on schedule. The first four Fleet Hospitals will be ready for deployment in March of 1985. And by 1990, we will have achieved our programming goal of 11,250 Fleet Hospital Beds, plus the 2000 beds provided by the two hospital ships.



SEALIFT IN SUPPORT OF POWER PROJECTION BY NAVAL FORCES

The global interests of our nation depend on both the deterrence of aggression and the maintenance of an economic environment favorable to the peoples of the free world. In order to accomplish these objectives, free access to critical natural resources at their source remains paramount. The vast majority of free trade is conducted over the global sea lines of communications (SLOC). Given these imperatives, our National Command Authority is fully committed to a strategy based on maritime superiority.

Security of these vital SLOCs and defense of global interests and allies requires a potent force capable of timely and measured response anywhere in the world. Only the power projection forces of the Navy/Marine Corps team are prepared to meet this full range of contingency requirements.

Naval power projection capabilities rest on three distinct but complementary elements of naval force. They are the Carrier Battle Group, Amphibious Forces and Marine Air-Ground Task Forces (MAGTFs). These elements, when taken together, provide the flexibility and mobility that is required to pursue this nation's maritime strategy.

Central to the employment of naval forces in the power projection role is the availability of sufficient sealift assets to accomplish the assigned mission. Presently, adequate sealift remains a major obstacle to the full exploitation of the power projection capabilities resident in our naval forces.

The Marine Corps with the full participation and cooperation of the Navy has, in the past year, made significant strides in concluding agreements and in planning for enhancement of our presently inadequate sealift posture. Indeed, the past year marks a watershed in Navy-Marine Corps efforts to marry lift requirements to the development of the Naval Ship Construction Plan.

Principal among the accomplishments of the past was the completion of the DON Long-Term Amphibious Lift Requirement and Optimum Ship Mix Study which, for the first time, accurately determined our lift requirements for future years. The effect has been to establish a set of lift criteria by which the Navy can tailor its amphibious ship construction plan to meet our needs. The Commandant and the Chief of Naval Operations have consolidated this effort by signing an agreement which fixes the MAGTF Lift "Fingerprint" through the mid-'90s. As a result, the Navy and Marine Corps are able to present a united front in the development of strategic mobility initiatives.

The Navy/Marine Corps Team continues to pursue strategic mobility enhancement initiatives to both complement the current lift capability, and to increase our ability to respond to crises in the near-term. Although current amphibious lift assets remain inadequate, it is clear that the erosion of lift capability has been arrested, and that it is now being reversed. The attached papers represent dramatic evidence of the enhanced power projection capabilities naval forces will possess in the years ahead.



AMPHIBIOUS LIFT

Although the Marine Corps does not fund any portion of sealift assets, its role as an expeditionary force causes it to carefully monitor the status of amphibious assault shipping. The 1986 Defense Guidance directed the Department of the Navy to program the amphibious assault lift for the assault echelons of a MAF and MAB. This mid-term objective is to be realized by the end of Fiscal Year 1994. The assault echelons comprise only a small portion of the total MAF or MAB force structure. The remaining structure must be transported either by air with the Fly-In-Echelon (FIE) or by commercial-type shipping as part of the assault Follow-On-Echelon (AFOE). The Navy and Marine Corps have agreed to stabilize the stated AE lift requirements specified for the 1990's MAF and MAB in order to provide a basis for the programming of a balanced amphibious ship force structure with the capacity to lift these assault echelons. The stated lift requirement will provide for the simultaneous employment of a MAF(AE) and a MAB(AE).

The current MAF(AE) lift capability is dependent upon the availability of all active and reserve amphibious ships. To attain and maintain a level of amphibious assault shipping sufficient to simultaneously lift a MAF(AE) and a MAB(AE) requires continuous new construction throughout the 1990's. An outgrowth of this coordinated effort to revitalize the amphibious ship force has been the development of a number of innovative proposals for improved ship-to-shore mobility that will support a wide range of operational concepts and ensure that a credible amphibious warfare capability exists through the end of this century.

THE NTPF AND MPS PROGRAMS

In response to the Defense Guidance, the Marine Corps has, in concert with the Navy, developed strategic mobility enhancement initiatives to meet near-term and long-term shortfalls in strategic lift. To meet near-term shortfalls the Marine Corps has developed a program referred to as the Near-Term Prepositioning Force (NTPF). Long-term shortfalls are addressed by the Maritime Prepositioning Ships program (MPS). These initiatives are designed to substantially reduce strategic lift requirements and to improve the response time of credible, sustainable forces.

The Marine portion of the NTPF program provides prepositioned equipment and supplies to outfit and sustain Marine forces for contingency use in support of USCENTCOM. Included in this prepositioning program are the logistics stores required to sustain the combat operations of a mechanized heavy MAB for 30 days. Limited munitions, POL, and water support are also available to Army/Air Force units.

Three MPS brigades of equipment will be formed using the afloat prepositioning concept developed and implemented for NTPF. MPS-2 is scheduled to replace the Marine portion of the NTPF. The MPS program will provide a more substantial capability than NTPF to any CINC on a regional or global basis. Each of the three MPS squadrons will be comprised of four or five ships specially designed and chartered to meet requirements for 30 days of self-sustained operations, spread loading, and the other unique characteristics required to support the force. The MPS MABs will be structured, equipped, and trained to provide a rapid pre-emptive naval response in unopposed situations, and/or a strategically mobile reinforcement capability for previously committed forces. MPS MABs will have a global response capability, will be capable of introduction without benefit of port facilities, and will be prepared for subsequent employment ashore for 30 days without depending on Host Nation Support or other U.S./Allied land force elements. The concept for deployment of these forces requires an airfield in the vicinity of the offload site for a marriage of the Brigade's personnel with the embarked equipment and supplies.

NTPF and MPS brigades are well-suited for rapid employment missions. Employed independently, they offer a quick response and a credible, sustainable force.

STRATEGIC SEALIFT REQUIREMENTS

In addition to the strategic sealift assets necessary to project the power of amphibious naval forces, a requirement exists to provide strategic sealift for follow-on forces required for their support and reinforcement. The assets available to meet this strategic sealift requirement are divided into two distinct subsets known as Fast Sealift and Sustaining Sealift.

The Fast Sealift program recognizes that a requirement exists to provide a "dash" capability to rapidly transport bulk supplies and equipment from CONUS to overseas objective areas, and to reinforce deployed forces until permanent strategic lines of communication are established. The Fast Sealift program provides for the acquisition and conversion of eight, high-speed, TAKR ships to a RO/RO configuration.

Sustaining Sealift, to meet national strategic shipping requirements during periods of mobilization or national emergency, is critical to the conduct of a maritime strategy. The Military Sealift Command controls U. S. sealift assets during any mobilization or emergency. Sealift resources will be made available from the MSC controlled fleet, the U. S. Flag Merchant Marine, and the National Defense Reserve Fleet. Given the importance of sustaining sealift to the conduct of a maritime strategy, MSC has embarked upon a Sealift Readiness Enhancement program. This program is designed to augment the assets available to the U. S. Flag Merchant Marine. The MSC has identified some 120 commercial ships to be made available within 60 days of request for support. Additionally, certain vessels presently in the National Defense Reserve Fleet have been identified for upgrade and assignment to the Ready Reserve Fleet (RRF). To date, some 27 ships have been assigned to the RRF and will be available for use within ten days of recall.

LHD - 1



DESCRIPTION: LHD-1 is a multipurpose amphibious assault ship. It will be equivalent in size to the current LHA.

PROCUREMENT PROFILE: FY84 FY85 FY86 FY87 FY88 FY89 FY90

QTY	1	-	1	-	1	1	1
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WHY IS IT IMPORTANT? The LHD-1, a multipurpose amphibious assault ship, is needed to augment the LPH class helicopter assault ships (in the short term) and to replace this class in the future. The LHD-1 will significantly increase the total lift capability, provide a flight deck for both helicopters and VSTOL aircraft, and offer a well-deck for both air-cushion and conventional landing craft. In concept and design, the ship will be similar to the current LHA class, and it will be built using much of the same technology.

WHAT IS THE MARINE CORPS POSITION? The current level of 63 amphibious ships is inadequate to support the lift requirement for a MAF(AE) and a MAB(AE). Therefore, procurement of at least five LHD-1 class ships by 1994 is desired.

LSD - 41



DESCRIPTION: LSD-41 is a wet-well, two-helo spot, conventionally powered amphibious assault ship. It will be 610 feet long and 84 feet in width. It will displace 15,875 tons, and will be diesel powered. The design of a follow-on ship, the LSD-49 is being developed based on a LSD-41 hull optimized for cargo lift.

<u>PROCUREMENT PROFILE:</u>		<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
QTY	LSD-41	1	2	2	-	-	-	-
	LSD-49	-	-	-	-	2	2	2

WHY IS IT IMPORTANT? In 1967 there were 162 active amphibious ships. Today there are 63 total - including both active and reserve ships. Procurement of new amphibious ships is critical to retention of an amphibious capability. Specifically, the LSD-41 serves three purposes: as a first hedge against bloc obsolescence of amphibious ships, as a replacement for well deck capability lost with retirement of the eight LSD-28 class ships between 1984 and 1990; and finally, it is optimized to transport and operate the new Landing Craft Air Cushion (LCAC) vehicle.

WHAT IS THE MARINE CORPS POSITION? The current mix of 63 amphibious ships is inadequate to support the national strategy. Therefore procurement of the LSD-41 class of ships to replace the capabilities lost with retirement of the LSD-28 class of ships, and to provide additional lift for a MAF (AE) and a MAB (AE), is essential.

MANUFACTURER:

- Lockheed Shipbuilding and Construction Company, Seattle, WA (LSD 41-43)
- Avondale Shipyards, Inc., New Orleans, LA (LSD 44-88)

LCAC



DESCRIPTION: The Landing Craft Air Cushion (LCAC) vehicle is a shipborne high-speed (40 knots), over the beach, ship-to-shore amphibious landing vehicle capable of a 60-ton payload. It is designed to lift all equipment organic to the MAGTF in an amphibious operation.

PROCUREMENT PROFILE: FY84 FY85 FY86 FY87 FY88 FY89

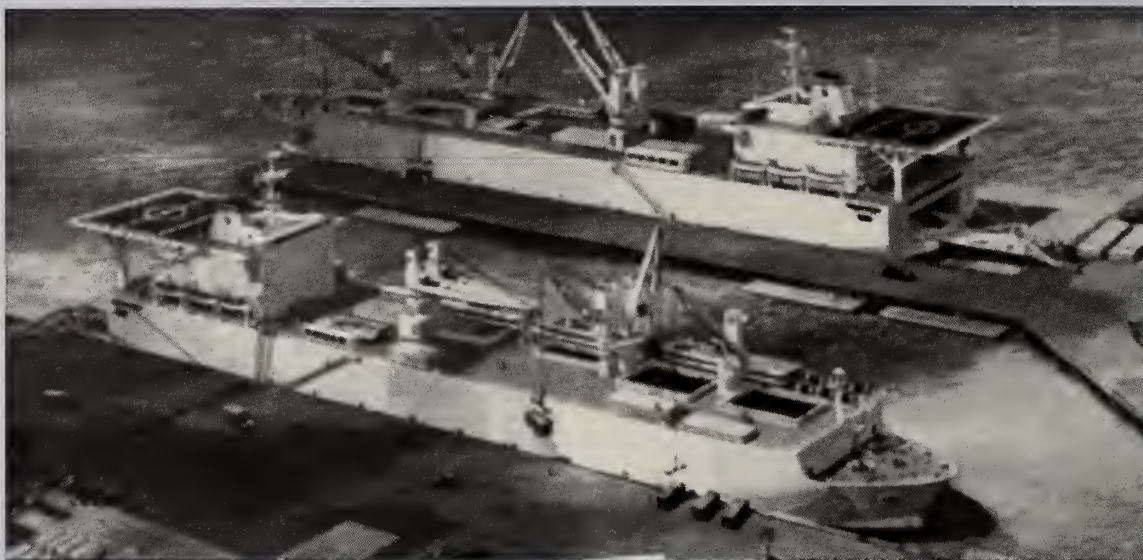
OTY (Units) 6 9 12 12 12 12

WHY IS IT IMPORTANT? Currently the Soviets have over 50 operational air cushion vehicles; about 100 are expected to be in their inventory by 1990. On the other hand, as noted in the latest introduction to "Jane's", the U.S. has consistently procrastinated in its procurement of this capability. This air cushion vehicle would replace current pre-WWII technology landing craft, scheduled for retirement in 1991, with modern technology landing craft that offer the following advantages over current landing craft:

- Expose 70 percent of the world's beaches, vice 17 percent to amphibious operations.
- Travel in excess of 40 knots, vice 9-11 knots.
- Craft characteristics provide over-the-horizon launch capability and decrease vulnerability of the force.
- Believed much more survivable in mined waters.
- Significantly increases build-up rate ashore, thus increasing probability of assault success.

WHAT IS THE MARINE CORPS POSITION? Six LCAC are the minimum needed to provide an initial operational capability for a MAU. Since the LCAC would introduce the most significant improvement to amphibious warfare since the introduction of the helicopter, LCAC procurement is strongly supported by the Marine Corps.

TAKX



DESCRIPTION: The Maritime Prepositioning Ship (MPS), designated TAKX, supports the MPS Program, a DOD strategic mobility enhancement initiative designed to speed the administrative introduction of credible forces into possible contingency areas around the world. The mission of the TAKX will be to provide lift/area/volume capacity, maintenance facilities, and environmental preservation for a balanced portion of the equipment, vehicles, supplies, POL and potable water to support three Marine Amphibious Brigades (MABs). A total of 13 vessels will be procured.

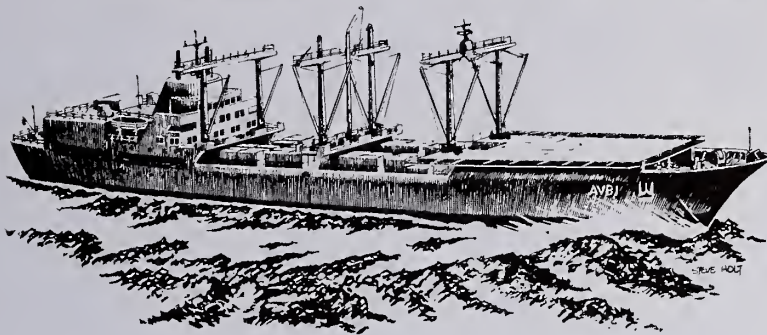
LEASING PROFILE: FY83 FY84 FY85 FY86 FY87 FY88 FY89

QTY (Ships)	-	3	8	2	-	-	-
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WHY IS IT IMPORTANT? The MPS program is designed to enhance the ability of the Navy and Marine Corps to provide a wide range of rapidly deployable deterrent options, each with its own discreet signal and its own credible, fully integrated combat capability. In view of the significance of the program to a viable Southwest Asia strategy, achievement of the deployment capability for the programmed MAGTFs is essential.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports the Maritime Prepositioning concept and the specially designed commercial ships necessary to make it a reality. Concern for the nations's ability to move forces rapidly has been central in Marine Corps planning. MPS provides the capability to respond to crisis situations where forcible entry is not required, but when time is of the essence.

AVIATION LOGISTICS SUPPORT SHIP (TAVB)



DESCRIPTION: The Aviation Logistics Support Ship (TAVB) provides sealift for movement of an aviation Intermediate Maintenance Activity (IMA) to support the deployment/employment of the Aviation Combat Element (ACE) of a MAGTF during contingency situations. The TAVB supports both amphibious and MPS operations. A Marine Corps IMA housed primarily in mobile vans is embarked in the TAVB and brought up to a partially functional status while enroute to a contingency area. Upon arrival, in the objective area the IMA and all supporting material will be phased ashore to ensure continuity of support for the Marine Aviation Combat Element.

The TAVB program involves the modification of two government-owned combination RO/RO and self-sustaining containerships currently retained in the Ready Reserve Force. Provisions will be made in the modification to embark 183 functional shop and supply vans, 80 accessible spare part stowage vans, plus 37 other vans with non-shipboard functioning items. In addition, 300 maintenance and support personnel are embarked to activate and operate the IMA during transit and in the objective area until the operation can be phased ashore.

The RO/RO ship will be modified only to the extent required to support the partial activation of the IMA in transit and will be fully capable of returning to a resupply role when the IMA has been offloaded and the ship released by the operational commander.

PROCUREMENT PROFILE: FY84 FY85 FY86 FY87 FY88 FY89

QTY (Ships)	-	1	1	-	-	-
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WHY IS IT IMPORTANT? Achievement of full combat capability by the Aviation Combat Element of the Amphibious or MPS MAGTF requires the rapid in-theater establishment of a functional IMA to perform aircraft maintenance. Because of the scarcity of strategic airlift assets to lift the IMA facilities when required, a sealift capability providing en route and in-theater aircraft maintenance support above the organizational level is required.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports the TAVB concept. It accommodates traditional support of the deployed ACE, enhances operational flexibility, and retains all critical aircraft support assets with its operating forces.

NAVAL SURFACE FIRE SUPPORT

While evolving concepts for the amphibious assault include the insertion of forces in unopposed areas from over the horizon, contingencies may still require assaults on defended beaches and landing zones. Moreover, projected threat tactics, utilizing highly mobile and mechanized forces, include prompt, violent counterattacks against landing forces in the objective area. To defeat these counterattacks, and to support helicopter-borne assaults 15-25 km inland, the range required of NSFS systems may reach 50 km or more, depending on ship stand off. Critically important is the rapid-response, close, continuous and all-weather (day and night) fire support needed during the first 24 hours of the operation until artillery is established ashore. The current inventory of NSFS platforms is deficient in range and lethality due to heavy dependence on 5" caliber guns.

The Marine Corps supports several near- and mid-term improvements to enhance NSFS capabilities. Near-term programs which will satisfy Marine Corps accuracy and lethality requirements are available by improvements to current capabilities. The Marine Corps fully supports the reactivation of all four Iowa class battleships. To make the battleship an even greater asset - development of an improved 16" conventional munition projectile which deploys armor-defeating submunitions promises a quantum leap in lethality. Another program, aimed at improving lethality of 5" ammunition by increased accuracy, is the semi-active, laser-guided projectile (SAL-GP) program. Both of these munition-enhancement programs are strongly endorsed by the Marine Corps.

For the mid-term, two proposed programs promise improvement in the NSFS posture and are viewed favorably by the Marine Corps. Shipboard rocket systems would provide a high volume of firepower against area targets. This type of fire is needed to halt and destroy armored formations and to provide rapid, devastating counterbattery fire. Secondly, development of a large caliber gun system would overcome the range restrictions and lethality deficiencies of the 5" caliber family.

MEDICAL SUPPORT

The timely provision of adequate wartime medical support to the Fleet Marine Force requires a wide range of expeditionary medical facilities. These facilities must be maintained at a high level of readiness in terms of trained manpower and logistics preparations. As a force in readiness, the FMF's mission to respond to global contingencies dictates that medical support facilities must be strategically mobile and capable of rapid expansion with MAGTF growth. Medical support assets should be sufficient overall to support three active MAFs while retaining the capability to be sized and packaged for employment with task organized MAGTFs. The structure of medical support must include rapidly deployable afloat facilities capable of providing support immediately upon arrival in the AOA.

The following subsection provides an overview of FMF medical support requirements and descriptions of program actions in the critical area of expeditionary medical care.

THE NAVY CONTINUUM OF CARE A THEATER CONCEPT OF OPERATIONS

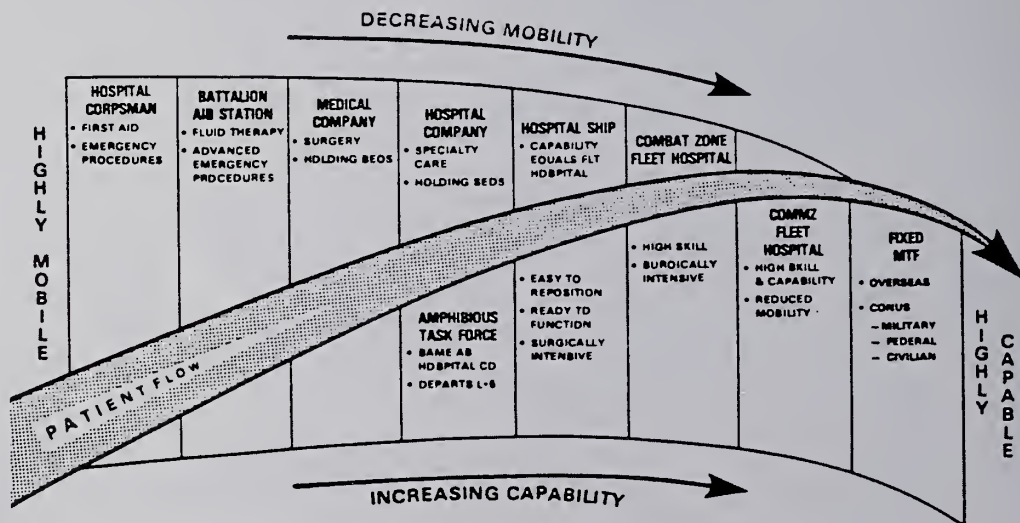
Theater combat casualty care for the Navy/Marine Corps team requires establishing a continuum of care (Figure 1) that extends from the forward edge of the battle area (FEBA) to CONUS, and includes all or portions of the following medical assets:

Marine Corps

Company Aid Man
Battalion Aid Station
Medical Battalion
-- H&S Company
-- Five medical companies
-- One hospital company

Navy

Casualty Receiving and Treatment Ship
-- LHAs, LPHs
Hospital Ships
Fleet Hospitals, Overseas Hospitals
CONUS Hospitals
-- Navy and other service hospitals
-- Veterans Administration hospitals
-- Civilian-Military Contingency Hospital System (CMCHS)



Theatre Medical Continuum of Care
Figure 1

Upon injury or onset of disease, casualties are first seen by hospital corpsmen in the field, and then referred to the Battalion Aid Station (BAS) for resuscitation/stabilization and transferred to a Medical Company by ground vehicle. Casualties whose wounds make them non-transportable will receive surgical care in the Hospital Company to the rear. At the Hospital Company, additional specialized care is provided. Depending on the evacuation policy and patient loads, the patient is then transferred to a Hospital Ship, Combat Zone Fleet Hospital, or out of the combat zone to a Communication Zone Fleet Hospital or overseas medical treatment facility.

In the Communication Zone, the casualty is treated in a Communication Zone Fleet Hospital or overseas medical treatment facility staffed and equipped for definitive care. The mission of these hospitals is the rehabilitation of casualties to duty status; or, if rehabilitations cannot be accomplished within the evacuation policy, these casualties are transported to CONUS.

Transportation from one Deployable Medical System (DMS) to another in the Combat Zone is assumed to be by ambulance, and from the Combat Zone to the Communication Zone and beyond by AIREVAC. It must be realized that helicopters for patient transport may not be available within the Combat Zone. The size and capabilities within the Combat Zone may permit tactical air evacuation (Figure 2).

Distribution of patients outside the Marine organic medical units (Medical Company and Hospital Company) will be controlled by the Joint Medical Regulation Office. Medical regulation within the Marine Corps will be done in the Medical Battalion of the Marine Corps Force Service Support Group located in the Combat Zone.

CONCEPT OF MEDICAL SUPPORT CASUALTY FLOW PATTERN

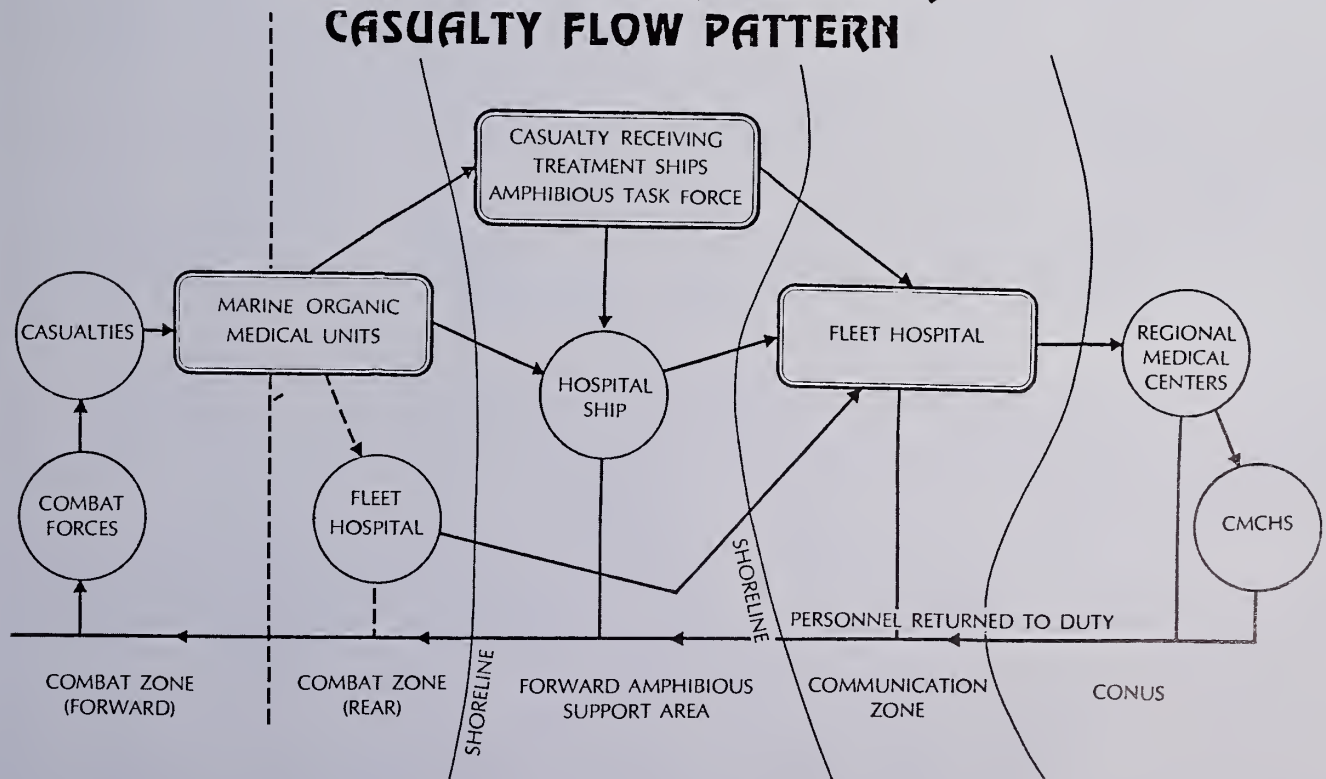
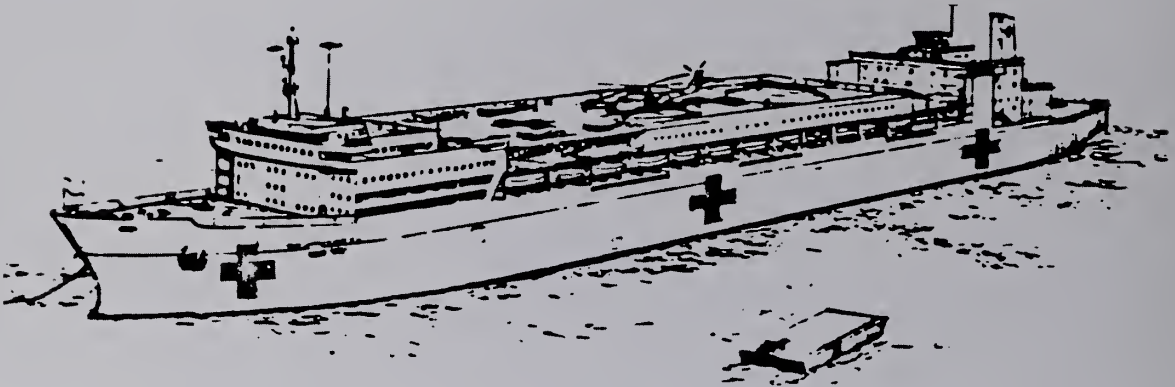


Figure 2

TAHX

HOSPITAL SHIPS TO SUPPORT CONTINGENCY OPERATIONS



DESCRIPTION: On 29 June 1983, the Department of the Navy awarded a contract to APEX Marine Corp./National Steel and Shipbuilding Co. of California to convert one tanker into a hospital ship with an option for a second ship conversion. Conversion to a 12 operating room/1000 bed hospital ship is in progress and delivery is projected for October 1986. Delivery of the second ship is projected for July 1987.

Upon delivery the ships will be maintained in a reduced operating status, with the ability to mobilize all civilian operating personnel, all key medical personnel plus necessary support, and a 30 day supply of consumables within 5 days. Secondly, the hospital ships could provide full hospital service assets available for use by other U.S. Government agencies involved in support of disaster relief operations on a worldwide basis.

PROCUREMENT PROFILE: FY83 FY84 FY85

Ships	1	1	-
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WHY IS IT IMPORTANT? A hospital ship capability is required to support a Marine Amphibious Force (MAF) amphibious assault. During the initial stages of the amphibious assault, neither the organic medical assets of the Medical Battalion, nor the medical support provided by the Navy can be effectively established ashore to receive and adequately treat initial combat casualties. These facilities require a large relatively secure area and sufficient time to phase ashore and establish operations. The medical facilities aboard our combatant ships, although adequate in quality, are simply incapable of handling large numbers of combat casualties.

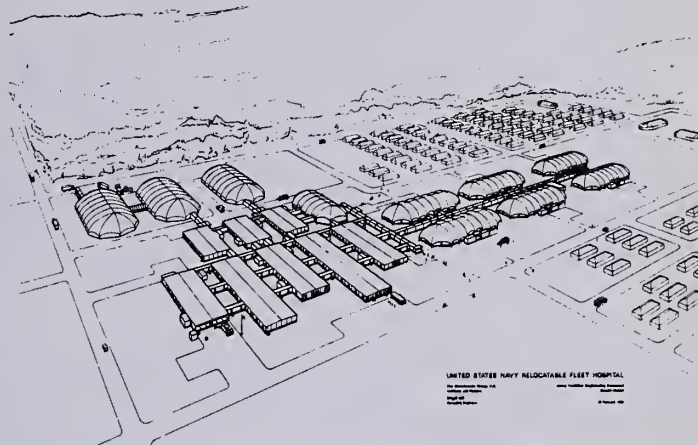
Only the hospital ship can provide the timely initial surgical capacity required by amphibious forces. The requirement for a hospital ship capability has been recognized explicitly by CINCLANT, CINCPAC, CINCUSNAVEUR, and CINCENT.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps strongly supports the TAHX program.

NAVY FLEET HOSPITALS



Combat Zone



Communications Zone

DESCRIPTION: Fleet Hospitals are modular, rapidly erectable, relocatable medical facilities for treatment of both Navy and Marine Corps wounded. This Navy Program provides both Combat Zone (CBTZ) and Communication Zone (COMMZ) facilities of varying sizes for a balance of mobility, flexibility, and levels of care. Fleet Hospitals will receive patients from amphibious task force ships, directly from medical units organic to Marine forces, and from hospital ships. Fleet Hospitals can be staged in CONUS or prepositioned either afloat or overseas in advance of hostilities. The total program calls for 19 hospitals. Procurement and assembly of the first 1500 beds (two 500-bed and two 250-bed Combat Zone Hospitals) were initiated during FY83. These first four hospitals will be available for delivery during FY85.

<u>PROCUREMENT PROFILE:</u>	<u>FY83</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
	(2)CBTZ 250-bed	(2)CBTZ 500-bed	(1)CBTZ 500-bed		(1)COMMZ 500-bed	(1)COMMZ 500-bed	(2)COMMZ 500-bed
	(2)CBTZ 500-bed	(1)CBTZ 250-bed	(1)COMMZ 500-bed	(2)COMMZ 1,000-bed	(1)COMMZ 1,000-bed	(1)COMMZ 1,000-bed	
			(1)COMMZ 1,000-bed		(1)CBTZ 500-bed		
	(4) 1,500 beds	(3) 1,250 beds	(3) 2,000 beds	(2) 2,000 beds	(3) 2,000 beds	(2) 1,500 beds	(2) 1,000 beds

TOTAL 11,250 BEDS

WHY IS IT IMPORTANT?: Fleet Hospitals will provide rapid treatment in-theater to save lives, reduce morbidity and maximize returns to duty.

WHAT IS THE MARINE CORPS POSITION?: Rapidly deployable Fleet Hospitals, like hospital ships and medical battalions, are an integral part of the Naval theater medical support structure and continuum of care. All elements of the continuum are needed to sustain combat operations.

ADVANCE BASE FUNCTIONAL COMPONENTS (ABFC)

DESCRIPTION: ABFCs can provide additional shore based medical and dental support, available to the FMF, in or adjacent to the beachhead. It must be emphasized that ABFCs are not pre-assembled and held in stock for immediate issue. Use of ABFCs requires allowance of sufficient lead time for funding, procurement, assembly, training and transportation. Medical/dental ABFCs are listed below.

WHY IS IT IMPORTANT? A medical or dental ABFC is a grouping of materiel and personnel designed to provide support to an advance base, to augment existing facilities, or to add capabilities that otherwise were not available.

Fleet Hospital (Communication Zone)	500-Bed
Fleet Hospital (Combat Zone)	500-Bed
Fleet Hospital (Combat Zone)	250-Bed
Station Hospital (Expeditionary)	100-Bed
Clinic (Expeditionary)	25-Bed
Clinic (Expeditionary) First Aid/Outpatient	
Hospital - 60-Bed Mobile (Tents) (Capable of Helo lift or Fly-away)	
Surgical Suite Supplement (Expeditionary)	
Casualty Receiving Unit (Expeditionary)	
Blood Bank (Liquid) (Expeditionary)	
Whole Blood (Liquid) (Expeditionary)	
Preventive Medicine Unit (Expeditionary)	
Ophthalmic Service Unit (Expeditionary)	
Dispensary 10-Bed, Mobile	
Casualty Staging Unit (Expeditionary)	
Dental Component Mobile	
Dental Prosthetic Component, Mobile	
Dental Clinic, Small (Expeditionary)	

WHAT IS THE MARINE CORPS' POSITION? The Marine Corps supports the ABFC as a critical medical support enhancement for the FMF.

SECTION IX

TRAINING

In November of 1981 the Commandant established a separate Training Department of the Headquarters Staff to provide more effective management of Marine Corps training as a total system. The Training Department is chartered to develop policies and programs for the training and education of Regular and Reserve Marines. This responsibility includes:

- Management and direction of training programs and initiatives.
- The analysis of training, and publication/evaluation of individual and collective training standards for all categories of training conducted in Marine Corps units and institutions.
- Analysis of training resources to achieve maximum effectiveness and efficiency of training in the context of missions and standards.

The Marine Corps has adopted a training system based on the successful completion of established training standards, both individual and collective.

The implementation of this system requires that our training program continue to be performance and mission oriented, realistic, and innovative. This section presents seven issues of importance to the development of the Marine Corps training program in 1984.

COMPUTER ASSISTED SYSTEMS APPROACH TO TRAINING
(Formerly Computer Assisted Instructional Systems Development)

DESCRIPTION: The Systems Approach to Training (SAT) process provides the framework within which Marine Corps training is developed, implemented and evaluated. The Marine Corps SAT process is based upon instructional systems development (ISD). The SAT process analyzes training requirements, translates these requirements into training objectives, selects the proper training strategy, develops effective training delivery systems, and provides quality control. It is a systematic, but flexible tool that ensures Marines acquire the knowledge and skills needed to accomplish the mission. The goal is to achieve the maximum return on training resource investment by improving on-the-job performance and reducing that investment where possible. CASAT is being developed so that the Marine Corps can carry out the SAT process in a timely and cost-effective manner.

<u>FUNDING PROFILE:</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>
(\$000)	81.6	445.0	515.0*	225.0

* An additional 304.4 will come from C⁴ Systems Division

WHY IS IT IMPORTANT? CAISD will facilitate the collection and processing of data from Marines in the field. It will:

- assist in the analysis of this data by identifying which tasks are performed, by whom, where, the relative time spent in performance, the task difficulty, the training emphasis and the commonality of tasks among MOSs and type units.
- prioritize the tasks based on specified criteria.
- recommend instructional settings based on cost data and task priority.
- facilitate the drafting and publishing of training standards by providing multiple formats and ease of update.
- facilitate the revision and maintenance of published training standards.
- evaluate student mastery at the training site, as well as student effectiveness in the field.

Through automation, trends can be identified and tracked and optimal solutions can be sought.

WHAT IS THE MARINE CORPS POSITION? CASAT will be developed for implementation at Headquarters, Marine Corps.

DEVELOPER/MANUFACTURER: Contract will be awarded to General Services Administration-Interagency Data Systems Facility (GSA-IDSF) contractor located in Huntsville, AL.

TRAINING REQUIREMENTS AND RESOURCE MANAGEMENT SYSTEM

DESCRIPTION: The Training Requirements and Resource Management System (TRRMS) will be the primary training information management system in the Marine Corps. TRRMS will consist of a centralized training information data base that will provide critical data analysis so that training requirements can be correlated with training resources. TRRMS will provide better projections of training requirements and improve reporting capabilities to OSD, OMB, Congress, and other government agencies. TRRMS will be utilized at the HQMC level.

<u>FUNDING PROFILE:</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>
\$(000)	14.0	245.3	257.0	-

WHY IS IT IMPORTANT? TRRMS will provide HQMC managers with ready access to accurate and timely data which will result in improved manning of operational forces and improved retention in the career force. TRRMS will reduce the shortfalls in trained personnel due to inefficient use of available training resources. The reduction of unfilled school seats will result in a more balanced MOS structure. The decision-making process will improve as this detailed information is made available to decision makers.

WHAT IS THE MARINE CORPS POSITION? TRRMS will be developed for implementation at HQMC.

DEVELOPER/MANUFACTURER: The Management Information Instructional Systems Activity (MIISA), under the control of the Chief of Naval Education and Training (CNET), is conducting the development, design, and implementation of TRRMS.

GUIDE FOR UNIT TRAINING MANAGEMENT

DESCRIPTION: The Guide for Unit Training Management will fill a Marine Corps training void. The guide is a plain language handbook that provides individuals who lack training experience with a logical training program. The guide reflects the systems approach to training, and incorporates the best elements of Marine Corps, as well as other service training concepts.

WHY IS IT IMPORTANT? Given personnel turbulence and training responsibilities that extend down to the junior NCO levels, a training guide becomes essential. Such a guide, while basic, provides the total picture. In the absence of a cohesive document, the inexperienced trainer lacks perspective and is continually responding to the next training crisis on the horizon without a plan for meeting the total training requirement.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps has developed a unit training management guide which was published as NAVMC 2779 during October 1984.

INSTRUCTIONAL MANAGEMENT SYSTEM

DESCRIPTION: The Instructional Management System (IMS) is a new system that represents a major enhancement in training management throughout the Marine Corps formal schools. IMS will provide the formal schools with the capability of tracking and monitoring student progress and performance; scheduling and management of training resources (equipment, classrooms, instructors, etc.); creating and updating programs of instruction (POIs), lesson plans and other course materials; and developing test materials and analyzing test results. IMS will also provide word processing equipment for Marine Corps formal schools. IMS will enable the CG, MCDEC to efficiently supervise and evaluate courses of instruction at over 30 Marine Corps formal schools. At the HQMC level, IMS will result in more efficient training management information for decision-makers.

<u>FUNDING PROFILE:</u>		<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>
(\$000)	(RDT&E)	962	762	1115	
	(PMC)				6966.5
	(O&MMC)				675.9

WHY IS IT IMPORTANT? The Instructional Management System (IMS) will enhance instructor productivity in the formal schools. IMS will enable student load increases without a corresponding increase in direct overhead support, and will reduce the time spent in labor-intensive administrative functions. IMS will result in a more efficient utilization of available training resources and will improve training management throughout the Marine Corps.

A prototype system was fielded in October 1984 at Camp Lejeune, NC and Quantico, VA for field testing at selected Marine Corps formal schools.

WHAT IS THE MARINE CORPS POSITION? Procurement of the Instructional Management System will take place in FY86. A phased implementation will begin in FY86 with the initial site activations.

MANUAL WAR GAMES

DESCRIPTION: The Marine Corps has fielded and is continuing to develop a variety of war games to enhance the training capabilities of both formal schools and the Fleet Marine Force. This program encompasses a powerful computer-driven system, the Tactical Warfare Simulation, Evaluation and Analysis System, (TWSEAS); a family of manual war games; and various occupational specialty games.

TWSEAS, which was originally fielded in 1977, consists of computer hardware and software and a tactical exercise center which is both surface and air-transportable. The present software supports either command post or field exercises. A TWSEAS network, under CG, MCDEC, supports the three fielded suites which are OPCON to CG, FMFPac, CG, FMFLant, and CG, MCDEC. Product improvement for the TWSEAS is underway at the Naval Training Equipment Center. This program will develop and provide a more capable and versatile software program which will be fielded in FY88. The new system will provide concurrent inputs from both simulated and actual forces to the MAGTF staff using TWSEAS.

The manual war games effort will provide for the phased production and distribution of up to five separate war games to Fleet Marine Forces and formal schools. The first, a company-level game, TACWAR, has been produced and was distributed in late 1983. A battalion level game, STEELTHRUST, is in the final prototype testing stage and is expected to reach the field in 1985. Other games are in various developmental stages.

Occupational specialty games are being developed for various MOS or job-specific scenarios to provide alternative means of exercising critical combat essential functions. The first of these games under development is "Tanker."

<u>PROCUREMENT PROFILE:</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>
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TWSEAS IMC			\$1.063M	
TACWAR	140 copies			
STEELTHRUST			50 copies	

WHY IS IT IMPORTANT? Each war game provides the commander with an alternative method of training or exercising critical combat functions of subordinate commanders, staffs, and individuals whose functions are critical to success in actual combat. The games are comparatively inexpensive to produce, provide realistic combat situations, and will augment existing training methods.

DEVELOPMENT OF INDIVIDUAL TRAINING STANDARDS

DESCRIPTION: Individual training standards are measures of job performance used to determine who can and cannot perform satisfactorily. They describe what an individual is supposed to do in order to perform a job successfully. Individual training standards constitute the basis for design, development, implementation, and evaluation of all individual training conducted in units and institutions. In addition, training standards can be used by the commander to determine proficiency, evaluate individual training, allocate training resources and maintain quality control.

<u>FUNDING PROFILE:</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
(000,000)	2.1	3.5	3.6	6.7	6.9	7.1

WHY IS IT IMPORTANT?

- Provides means to evaluate training.
- Standardizes acceptable level of performance.
- Eliminates unnecessary training.
- Enables efficient allocation of training resources.
- Ensures that all tasks needed for satisfactory performance are identified.
- Saves time of unit and school commanders.
- Enables assignment of responsibility for training to units or institutions.
- Avoids duplication of effort by units and institutions.
- Enables validation of occupational field structure.

WHAT IS THE MARINE CORPS POSITION? Individual training standards are being developed by CMC (Code T).

DEVELOPER/MANUFACTURER: The Naval Training Equipment Center is developing a program management plan that will include recommendations for developer/contractor support beginning in FY85.

SPECIAL TRAINING DEVICES

DESCRIPTION: Several special training devices are being purchased to substitute for or simulate weapons systems that are currently fielded. Among the systems being fielded are:

Training Set Fire Observation (TSFO). TSFO provides a vehicle to train forward observers for indirect fire weapons systems. TSFO is a computer-driven graphic training system that realistically portrays weapons effects on a screen and allows the student to learn call-for-fire and adjustment techniques. TSFO was fielded at MCDEC, MCB, Camp Lejeune, MCB, Camp Pendleton, MCAS, Kanohe, MCB Camp Butler, and LFTCPac in FY84.

Launch Environment Simulator - Dragon (LES-D). LES-D provides a realistic simulation of the Dragon launch experience, complete with recoil, sound level, overpressure, flame, smoke, and short-term target obscuration. LES-D is an enhancement to, rather than a substitute for, the current Launch Effects Trainer (LET).

Multiple Integrated Laser Engagement System (MILES). The Marine Corps will field, in the near future, additional sets of MILES equipment at MCDEC, MCB, Camp Butler, and MCAS, Kanohe.

Marine Corps Electronic Warfare Simulation Suite (MCEWSS). This provides an electronic warfare scenario for training up to a MAU-sized unit in a field exercise. The suite will provide simulation of both communications, jamming, and radar-directed weapons that would be found in a Soviet motorized rifle regiment's sector of operation. Fielding of three suites is planned for Twenty-Nine Palms, Camp Lejeune, and Camp Pendleton.

<u>PROCUREMENT PROFILE:</u>		<u>FY83</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>
QTY	TSFO		6 devices				
	LES-D		20 devices				
	MILES		3 sets				
	MCEWSS						4 suites

WHY IS IT IMPORTANT? Special training devices allow Marines to train in areas where, due to ammunition cost or range availability, they would not be able to use full caliber ammunition. Additionally, special training devices add realism to training exercises and allow Marines to experience those situations which closely resemble the conditions under which they will fight.

WHAT IS THE MARINE CORPS POSITION? Continue to develop and procure special training devices to enhance training.

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